# ASL

Australian Society
for Limnology Inc.

# NEWSLETTER

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# AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology Inc. (ASL) is an association of over 500 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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# CONTENTS

Contents ..... 1
Editorial ..... 2
From the President ..... 3
Prattlebut, Scumour and Ruttle ..... 5
Letters to the Editor ..... 31
Postcards from the Sedge ..... 32
Conference Capers ..... 33
Conference Reports ..... 36
*SISORS II* ..... 36
*Sixth International Symposium on Salt Lakes* ..... 37
*Glasgow or Bust* ..... 39
*AWWA Seminar on Environmental Flows* ..... 43
Workshops ..... 44
60 Minutes ..... 47
Announcements ..... 50
*SIL Congress 2001* ..... 50
*Southern Hemisphere Stream Ecology at NABS 1995* ..... 50
*Proposed Australian Biodiversity Council* ..... 51
*SA Members take a look at Biodiversity and FASTS* ..... 53
*Proposal to establish a Sydney Branch of the ASL* ..... 55
Calls for Help ..... 56
Volunteers ..... 58
Art Work ..... 58
Book Reviews ..... 59
Bibliography ..... 61

Material for publication in the December 1994 Issue of the Newsletter should be sent to the Editor (see back pages) before **30th December 1994**.

Long articles should be forwarded as unformatted text, preferably IBM-compatible disks or via the editors email address. Beware encoded emails as we have limited access to decoders. Formatted text may be sent from any commonly used word processing package (eg. Word) on a floppy disc.

# EDITORIAL

Yet another issue of the ASL newsletter!! As with every year, this year too is flying past and soon the cricket season will be in full swing - summer bliss.

The most used and abused aquatic word in the mass media over the last few months has been DROUGHT (the opposite of flood for those who are confused). The drought affected regions are extensive and have inflicted economic devastation on many families. I have recently returned from my first adventure into Europe (beer drinking holiday in Germany and the Czech Republic - by the banks of rivers of course - where there is no drought!) and the first phone conversation I had with my part-time farmer father proved really interesting - a few brief mutterings relating to my wanderings and then straight onto the lack of rain.

As an aquatic ecologist I find myself in an immediate dilemma; by analysing hydrographs and examining the variability in rainfall data we often state that "Australia is an arid country where the extremes of flood and drought are to be expected". These extremes and the variability within are necessary for the maintenance of many indigenous ecosystems. My immediate reaction is "well you will try to farm sheep and cattle in the desert", but somehow I don't think the answer is that simple. Across most of the semi-arid lands we have dampened the small scale variability that occurs within the large extremes - this has created a false sense of security and perhaps increased our lack of preparedness and ability to understand and live with these flood and drought extremes. The scientific reality of extreme climatic variability is harder to handle when it includes people you are close to; but, we shouldn't forget that drought is a part of the nature of Australia. Part of our role as limnologists in the world's driest continent is to educate others concerning the importance and normality of this variability.

This issue of the ASL newsletter, however, is not drought stricken - note many articles in the Announcements section including news from the Biodiversity Council. At the back of the newsletter you will find a form for updating membership information - please fill this in.

Well, back to the cricket - that brilliant game of tactics - it's going to be a long hot summer and I am glad to see that the 1995 ASL Conference is being held during the cricket off-season.

# FROM THE PRESIDENT

## BIODIVERSITY AND LIMNOLOGY

"BIODIVERSITY" seems to be the word for this newsletter. We talked of biological diversity before the trendy jargon took the concept into the political arena. We studied what was there, what it was doing and whether it was changing. We discussed conserving diversity and managing aquatic systems. Now the concept of caring about our ecosystems and the diversity in them has hit the public arena- and the politicians are at least paying some lip service to these issues. They promise big $$'s, they sign biodiversity conventions in Rio, biodiversity policy for Australia is on the agenda. Limnologists, like other scientific groups, wait to see what will happen to their favourite organisms and ecosystems. But can we afford to just wait and see? This is one of the issues identified by ASL for our hit list of issues for a political agenda.

Others are also concerned that there be a role for scientists in the national debates on conservation of biodiversity. How do we make sure our expertise is used in decision making? Scientists are not renowned for communication of their insights into issues like this. As a result the Australian Biodiversity Council is proposed as a body to organise and channel SCIENTIFIC advice and opinion on biological conservation.

ASL has taken an active role in the process of forming this council. In January, on Rottnest Island, the membership decided that we should participate in this initiative and left it to the executive to act. Richard Marchant attended the first meeting at which the proposal was ratified. In August your executive voted a donation of $1000 towards the establishment of the Biodiversity Council. In October, as one of 14 societies giving donations we have been invited to become a member society (for $20 joining fee) and to nominate members for consideration for the council. There will also be opportunities for individuals to donate. The Biodiversity Council is due to be launched in December at the Forest Biodiversity meeting..

It is not intended that societies will be the financial supporters of the Biodiversity Council. But it is intended that the Biodiversity Council will provide an avenue through which we can channel our advice and opinions on biodiversity.

So congratulations ASL. We have found an avenue for input on one of our "ISSUES". If we look for ways of communication on other issues on our "hit list" and we keep updating that list I think our aim of a more active ASL will be met without compromising the friendly scientific nature of our society. ( wetland issues may be next - an "Australian Wetland Alliance" has been formed and your executive will soon consider our involvement with that).

Can I hear the age-old question "WHAT IS IN IT FOR ASL?" "WHAT CAN THE BIODIVERSITY COUNCIL DO FOR US?" To me the answer easy- it opens an avenue through which WE CAN HELP OURSELVES.

Some state and regional groups have been airing these issues amongst their members. We would like to hear more views. An example of the questions used in South Australia is provided in this issue (see Announcements section). Photocopy the page answer the questions and send your comments to your State rep. Let us have your comments and views in the next newsletter.

Margaret Brock

# PRATTLEBUT, SCUMOUR AND RUTTLE

## TASMANIA

### Inland Fisheries Commission

from: Paul Humphries

Seeing this is my last contribution as the Tasmanian correspondent, before I sally forth to a warmer future at the CRC and MDFRC, I have taken the liberty of voicing my thoughts about Tasmanian limnology as I see it.

In the six years that I have lived here on and off since 1985, I have come to love Tasmania for its natural beauty and variety of people and environment. It is sad to leave, but the lack of opportunities here is a problem which a lot of other people also feel acutely. It is pleasing to see greater interest in things limnological from landowners and landcare groups over the past few years and commitment from government (not delving too deep into motives), both federal and state, to deal with some issues, long simmering on the back-burner. The Inland Fisheries Commission for some time has, by necessity, carried the sometimes uncomfortable burden of responsibility for maintaining a viable introduced trout fishery while attempting to protect native freshwater fauna. And it has, for the most part, been able to maintain its impartiality, despite its detractors. IFC's record in limnological research has, in my opinion, been very good. Obviously, when there are so many rivers and lakes to explore and new species of fish to describe, it is relatively easy to be productive and novel. But with work on native fish, endangered species, herbicides, forestry activities, crayfish, invertebrates, mine contaminations, noxious species, water storage issues and environmental flows, it is not a bad record for an organisation which has usually only had four or five permanent research staff. While it goes without saying that the personalities involved have led and pushed the research at IFC to commendable heights, it must be said that the organisation is such that it has allowed these people (including myself) the opportunity to do things which may have been very difficult, if not impossible, elsewhere. Pressure from angling bodies is intense, but they are also loyal in a scrap, and the fair dinkum ones respect good science and see its worth.

There are also some encouraging signs from state government bodies like the Division of Land and Water Resources, who are finally (through the efforts of people like Big Dave Fuller) taking some responsibility for environmental issues such as water quality and environmental flows. Although we at IFC occasionally get a bit pissed off about these new interlopers, inhouse aquatic biologists in water-controlling departments are a necessity and long overdue.

Collaboration between various interested parties should be productive in the future.

It has also become apparent to me that Limnology (especially zoo-limnology) at the University of Tasmania, is slowly but surely becoming more moribund with every passing year. In the past few years, Peter Tyler and Pierre Horwitz have left, and while both continue to have involvement in Tasmanian limnology, their work by necessity will become more concentrated in their new environs. The Zoology Department has an enthusiastic, relatively young (and rather unfortunate) limnologist, but for whatever reasons, there doesn't seem to be the commitment to retain talent where it is most needed. I would find little incentive to attempt to establish a research base, in the face of such conditions (not that they are unusual in academia), but this poor waif seems to be doing it, nonetheless. And while one might imagine that the current leadership of the Zoo. Dept. might be a good sign for Tasmanian limnology, I tend to think exactly the opposite. In a previous ASL newsletter, I complained about the complete and utter lack of interest when I attempted to encourage a bit of limnological exchange via a Tasmanian ASL chapter. The number of environmental problems that this state faces are as great as any in Australia, although we may be fortunate in not having the populations to exacerbate them still further. One could imagine that there might be a whole department devoted solely to limnology, yet comment (and interest???) by extant academics on limnological issues is silently deafening. There needs to be an ongoing commitment by the University of Tasmania and especially the Zoology Department, to sound limnological research and to produce top-class graduate and post-graduate students who will work in Tasmania and elsewhere. It may require a number of years before there is enough death and retirement to turn things around, but lets hope that it is not left too long. If there is anyone out there who believes that what I say is too harsh and incorrect, I encourage you to convince me of the opposite.

I am not quite arrogant enough to think that I have done any better than others in being vocal about limnological issues, but working for the state government means that there is an impediment to commenting on issues with which one is involved. This impediment is not there with academics at universities, or so I'm led to believe. I am relatively /optimistic about the future of limnology in Tasmania, but then that's the kind of guy I am. My hope is that Inland Fisheries continues to do good focussed research and that the other government departments increase their level of involvement in limnological research. I intend to maintain my involvement in Tasmanian limnology from afar and will take every opportunity to come down and visit this wonderful place.

### University of Tasmania, Zoology Department

Will Elvey will begin shortly to test his will against the wiley *Cherax destructor*, an invader from the big island, using doing an Hons degree with Leon and Alistair Richardson as an excuse. Ed and Belinda are back from frolicking around blighty for several months.

### Division of Land and Water Resources

Big Dave Oldmeadow and Big Mark Nelson are champing at the bit, ready to rush off into Monitoring Riverine Health never never land. They have equipment, methods and sampling sites organised and their enthusiasm is boiling over.

### Peter E. Davies

This one-man tidal wave is still busy with the MRHI, but after 10 months is finally getting back into some real work, such as: the downstream effects of hydroelectric regulation on stream communities and the impact of forestry on streams, using natural and artificial ones.

## VICTORIA

### La Trobe Uni, Albury-Wodonga Campus

from: Gerry Closs

The big news from Albury-Wodonga has been the theft of one of our boats from its storage shed. Two long-haired yobs (presumably under-funded freshwater researchers) were seen behaving suspiciously with a boat, i.e. seen pushing it down Melbourne Rd, late one Saturday night. Obviously a highly professional job. A major police investigation is underway.

Trude Hotzel is progressing steadily with analysis of the River Murray phytoplankton data from MDBC. A particular focus has been on the dominant alga in the river, *Melaseira granulata*, and its relationship to flow, turbidity and silica concentration. Flow patterns appear to be the overriding factor in determining population development. Work will soon commence on a LWRRDC research project on developing a phytoplankton bioassessment protocol for Australian rivers. This project which will include sampling of local streams and rivers in conjunction with VIC and NSW water authorities.

The warmer weather has resulted in lots of randy fish in local billabongs. Michael Shirley and Gerry Closs have been chasing after them in another boat

with the aim of determining fish larvae abundances and distribution. Much of this work has been completed on very cold nights, late nights and very early mornings (a truly heroic effort!).
It's surprisingly difficult to row a boat around a snaggy billabong in the pitch black.

We are also awaiting the return of our intrepid leader Roger Croome from the Yunnan University in China where he delivered a paper on the Murray-Darling System as a member of a La Trobe University delegation. Despite his protestations that the trip was going to be all hard work, no one really believed him. Funny that!

## Freshwater Ecology Section of DCNR

from: Tim Doeg

Tim reports that nothing much has happened at the Freshwater Ecology Section of DCNR apart from a growing pile of bumph on his desk. He will have a full report on the contents of the bumph in the next newsletter.

## Water Ecoscience & CRC FE Urban

from: Keith Ferdinands

To placate the furrows of confusion that have no doubt appeared on the vast majority of your readers brows, let me first explain who this gnu kid on the block is. (It should be pointed out that despite that last turn of phrase no member of WES has ever listened to 'New Kids on the Block'; staff members were asked whether they had listened to this band during interviews, and those answering in the affirmative were not offered positions).

Water Ecoscience (WES) is the limno love-child of the former SWL & MWL (State & Melbourne Water Labs). Yes, after much discussion the two labs have merged, as Roving Reporter Rhonda, alluded to (probably a lot more succinctly than I have) in her last report. The name has produced many a moan and I personally still think we should have been called Wet, Wet, Wet, Inc., but upper management wanted to distance themselves from the band of the same name. We look forward to seeing what heinous interpretations/bastardisations of 'WES' will filter back to us. Please remember that Wees, the plural of the liquid transported via the urethra has two e's not one, so you will have to do better than that.

While there may be discussion of the new name for some time to come, the combined team promises to be a very good one combining a wide range of

urban and rural aquatic ecosystem monitoring and consultancy skills. Well, enough literary onanism on with the gnus. When not involved in a swag of planning committees associated with the merger, the following projects have been undertaken or are underway:

Streamwatch jointly funded by Melbourne Parks and Waterways and Melbourne Water Corporation kicked off in May 1994. The programme designed to monitor water quality and the ecological health of 18 waterways throughout the Melbourne Metropolitan area using both physico-chemical and biological indicators. In order to address the issue of sediment contamination, so often overlooked in monitoring urban waterways, chironomid larval abnormalities are being documented as part of the Streamwatch Toxicant programme with the assistance of Vin Pettigrove. It is envisaged that the program will run over at least the next few years with sampling carried out 3 times each year. As I type funding battles are underway to ensure that the program is ongoing and is not a victim of political in-fighting.

In keeping with the flavour of the month CEPA RBA methods have been used for all macroinvertebrate samples and there are plans to compare the efficacy of this new technique with the more labour intensive quantitative sampling that has been done in various metropolitan streams by MWL.

Mick Mackey is teaming with Jason Sonnerman to compile an impromptu photographic collection of micro-algae from reservoirs through to urban waterways.

Helping the existing MWL staff carry out this programme are a gaggle of new talent comprised of Tina Smith, Rhys Jones, Allistair Cameron, Kylie Lewin and Danny Vertessy. Nick O'Connor (formerly of VUT) has joined the ranks of WES and promises to add some multivariate 'cred' to the group. Nick will also be focusing his attentions on a LWDRRC grant which will examine the impact of treatment plant discharge on the macroinvertebrate community in receiving waters using a series of mesocosm experiments.

A BACI study looking at the impact of de-commissioning the Dandenong South Treatment Plant is underway and incorporates water quality, macroinvertebrate and diatom sampling. Diatom expertise comes courtesy of Michael Reid of the Centre for Palynology, Monash Uni. Michael is also involved in a project examining the impact of nutrient enrichment in the Plenty River around the Whittlesea area.

WES is still (for the time being) sharing space with CRC FE Urban comprised of Peter Breen, Suzie Moore, Jason Sonneman and Andrew Sharpe. I'll hand-pass to them for their activities. Well, that was quick. No comment form the CRC bods at this stage.

## The former SWL

from: Rhonda.

By the time this issue of the gnusletter goes to print the staff of SWL will have moved to their new abode at Ricketts Road. Not all staff will be joining WES, however, only a few from the Environmental Assessment Section will be departing. Joanne Harrison, infamous for her involvement with Lake Mokoan and irrigation drains, has elected to leave due to travelling time to our new location. Joanne has been with the SWL for a total of 5 years and currently runs the Water Quality Evaluation Unit. Why are we telling you all this? Well Joanne, has shamelessly decided to advertise her availability for job offers via this column. Other departures include Ross Dunn who will return to State Chem Labs to work on their computer network.

New staff to join the SWL team are Tanya Rankin and Edward (Espy-loving) Tsyrlin, both working in the invertebrate group. Both are on, those ever-popular, short term contracts, with Eddy about to choof back to Russia for a holiday, before starting a post grad degree at James Cook. Rhonda Butcher and Tania Rankin are taking part in the first two weeks of the Horn expedition to central Aust., diverging into terrestrial bugs and reptiles. Fear not limnos, should it rain, they will do some limno work.

## Environment Protection Authority, Victoria

from: Leon Metzeling

Now is the season of our monitoring madness (with apologies to WS) From mid-October to mid-December we'll be having two or sometimes three teams of people in the field, working mainly on the CEPA funded invertebrate monitoring program but also on a few other projects. Doing the bulk of the CEPA work are John Dean, Ros StClair, David Bryant, Rebecca Hewlett and Tim Bessel-Browne, with occasional assistance from Nina Bate, David Tiller, Jan Barton, Lisa Dixon and myself. We'll be sampling about 90 sites in country areas plus 50 sites in urban Melbourne using rapid bioassessment techniques. A related LWRRDC project will be commencing in December comparing RB techniques with traditional quantitative methods.

Jan and Ros continue to work on rotenone, using a DCNR dosing program to examine disturbance and recovery of invertebrates in small upland streams. Peter Newall continues to get excited about diatoms (I've still got no idea why!) and is trying, with David Tiller, to develop nutrient guidelines applicable to Victoria. John and Ros will soon be receiving funding from CEPA to do taxonomic work on mayflies and caddisflies. There are lots of other things being looked into such as fish farms, sediment impacts due to weir desilting (in

collaboration with Tim Doeg), ecology of the lower Goulburn River, reporting on the water quality monitoring network and answering the phone. Needless to say, the last item is the most time consuming!

EPA has a regional office in the LaTrobe valley which is where Dave Robinson and Frances Cannon are based. They are involved in many projects including reviewing the monitoring of the LaTrobe River catchment, the impact of alpine resorts on alpine streams, assorted discharges into local streams, water quality and ecology of the Gippsland Lakes and ocean outfalls.

After my last contribution to this newsletter, it was brought to my attention by the former Cyanofighter (Phill Johnson, also known as Mr Blue-Green Algae), that I neglected other water related activities within EPA which may be of interest to ASL members. After the dust had settled on the e-mail wars, I agreed to redress this oversight. So here it is.

Revising State Environment Protection Policies (SEPP) has been all the go in EPA in recent years. Phill and Diane Rose have recently completed revising the Port Phillip Bay SEPP (I thought that this was slightly outside of ASL's area of interest but...anything to promote harmony within the organisation). The draft policy is currently with the Minister for approval. Trevor Blake is nearing the end of his revision of the LaTrobe River SEPP and Russell Costello is commencing the revision of the Yarra River SEPP. In this task he will be ably assisted by Julia Reed whom we have recently seconded ( ie poached) from the Freshwater Ecology Group of DCNR. (This is currently the cause of acrimonious litigation between EPA and DCNR - is that right Timmy? - the proposed penalty being 2 jugs) Chris Bell is involved in a range of watery policy issues, most notably the ANZECC Australian Water Quality Guidelines for Fresh and Marine Waters.

All the SEPPs will become Schedules of the mother of all SEPPs - Waters of Victoria. SEPPs have traditionally specified levels of water quality which are required to protect beneficial uses of the water, have set out indicators by which they can be measured and a program by which these objectives can be met or maintained. An exciting development is that these latest revisions are now incorporating ecological objectives rather than just relying on water quality. This is a challenging task but one that is long overdue.

## WESTERN AUSTRALIA

Firstly my (*Mark Lund*) apologies for not getting the news in on time for the last ASL newsletter, I did actually send some news but my Email held onto to it for about a week before informing me that it didn't know what to do with it. Below are the responses to the flurry of faxes I sent out a couple of weeks ago.

### Water Authority of W.A.

from: Shirley Balla

A second broadsheet has been produced by Andrew DelMarco at the Water Authority of W.A.. It is entitled " Encouraging wise use of Perth's wetlands". This broadsheet is an overview of Perth's wetland resource and its values. It highlights the International, National and Regional recognition given to wetlands, provides a description of wetland management objectives and indicates wetlands protected in the conservation estate or by the Department of Environmental Protection's Swan Coastal Plain (Lakes) Environmental Policy. Copies of this broadsheet are available from Shirley Balla, Groundwater & Environment, Water Authority of WA, P.O. Box 100, Leederville, W.A. 6007.

The size of the Environmental Management Section at the Water Authority is slowly growing. The recent arrival of Phil Gatt (an ex-Murdoch Uni student with a post grad Dip in EIA) swells the numbers of bodies to 6 permanent staff. However, changes are in the wind with the Water Resources part of the Authority likely to separate from the Utility part. What will happen to the Environmental Section is uncertain but all will become clear early next year.

### Murdoch University

from: Kerry Trayler

*Aquatic Research Group*

In early April, Arthur McComb suffered a stroke and a number of other complications during heart and carotid artery surgery. After such a worrying time, we are pleased to report that Arthur is now well on the way to recovery and regularly visits the University to consult with staff and students.

Over the last six months travel seems to have been common within the Aquatic Research Group. Jenny Davis is bursting with new ideas, having arrived back from an extended study leave which encompassed three months in the Northern Territory, three weeks in the U.S. , three weeks in the U.K. and several days in Switzerland.

In April Jane Latchford returned from a six week tour of the U.S. and Europe. Jane presented some results from her study at a conference for the American

Mosquito Control Association in San Diego. Seems that Americans always do things in a big way - they have a dedicated airforce to control their mossies. In California, Jane discovered a unique form of wetland pollution. Instead of the usual cans and bottles, their saltmarshes are littered with shoes and clothing, the result of illegal aliens swimming their way into the U.S. In Europe, Jane explored the saltmarshes of North Wales and The Netherlands.

On a somewhat lesser scale, Declan Morgan and Kerry Trayler spent much of April driving around the state looking for reference sites for the Monitoring River Health Initiative (MRHI). Phil Papas, who has now taken over as research assistant on that project, spent his first day in the new job in Canberra as part of his initiation. Since then he and Brian Morgan have been hunting the state trying to find where Kerry and Declan had been - seems everything looks different with water in it!

Lorna Charlton has just completed her final trip up to Millstream and Kununurra.

Unfortunately, Faye Cheal hasn't been anywhere lately. But, then Faye has probably done more travelling than most in the last few years.

*Estuarine Research Group*
Not to be out done by the much travelled Aquatic group, Ian Potter has just returned from the UK and Germany. And just in time, it seems the group is being swamped by Honours students. Glen Young, Fiona Valesini & Dave Tiivel are all approaching completion time for their theses examining aspects of fish communities in different estuaries. Another honours student Richard McColluch is looking at differences in Black Bream stocks of estuaries using electrophoresis.

The big news from this group is that after too many years to mention, Tom Rose has finished his PhD and after some minor corrections, will finally be awarded his doctorate. Hooray Tom, at last we can have that walk against thirst! Tom currently has a position with the Waterways Commission.

**University of WA (Zoology)**

from: Peter Davies

Dr. Don Edward is working on the MRHI program (as is the case with everyone else in Australia!) concentrating on the Karri Forest region.

I have just received information that LWRRDC (Land and Water Research and Development Corporation) will fund an application of mine within the National River Health Program on "Assessment of River Health by the Measurement of Community Metabolism". This is a 2.5 year program commencing later this

year. In addition, I will be working on the National Riparian Program, also funded by LWRRDC over the next five years. The Water Authority of Western Australia has funded a collaborative research program between Griffith University with Dr S. Bunn and Professor A. Arthington and the University of Western Australia with myself, on environmental flow requirements. This study is based on lower river systems below the North and South Dandalup reservoirs and the results are expected to be applicable to other impounded rivers on the Swan Coastal Plain.

**University of WA (Centre for Water Research)**

from: Caroline Wood

1. International Symposium

The Centre for Water Research (CWR) and the Coastal and Offshore Engineering Institute at the Universiti Teknologi Malaysia have jointly organised a Symposium to be held in Malaysia from 29 October -3 November. Pre-symposium events include two short courses run by the CWR and Delft Hydraulics and a workshop on 'Trends in Flow Instrumentation for Laboratory & Industrial Research". The symposium has attracted modellers, ecologists, chemists, biologists and hydraulic engineers who will deliver papers dealing with field studies, modelling simulations and laboratory investigations aimed at providing a better understanding of factors which control water quality in lakes, reservoirs, rivers, estuaries and coastal seas. Topics that will be covered include: case studies, field implementation of control strategies, ecological processes, laboratory studies of controlling factors, use of numerical models and methods for management.

2. The State Government recently announced the formation of the Western Australian Estuarine Research Foundation to be chaired by Professor Jorg Imberger who is the head of the CWR and Department of Environmental Engineering at UWA. The Foundation will fund research projects under two distinct categories : a) applied projects which meet specific objectives set by the Board and b) fundamental projects aimed at furthering our understanding of the ecological principles governing estuarine ecosystems and their management. The Foundation will be calling for proposals sometime at the beginning of November.

3. Work has begun on a joint facility to be shared by Murdoch University and UWA that will simulate the response of natural stream systems and tertiary water treatment systems at elevated levels of contaminants and altered flow regimes. The facility will provide a focus for collaboration between physical, chemical and biological researchers from CWR and School of Biological and Environmental Science (Murdoch). The facility will support fundamental research into the capacity if tertiary treatment systems to remove nutrients and

other pollutants, and the potential for reuse of wastewater. It will also support research into the ecological consequences of altered stream flow regimes, and elevated levels of nutrients, salinity and suspended solids. These processes will be examined using a series of artificial stream channels linked to the effluent discharge. By combining the research focus of the two groups the proposed facility is a natural extension of the limnological research carried out at the CWR and the wetlands and river systems research at BES.

Carolyn Oldham has been appointed as Lecturer, Department of Environmental Engineering, Centre for Water Research. She will be responsible for expanding the Department's activities into environmental chemistry with special emphasis on water quality in drinking water storage systems, aquatic particles, colloids and macromolecules and modelling of marine and freshwater systems. Carolyn took up her position in July.

## Edith Cowan University

from: Mark Lund

The Department of Environmental Management is currently in recovery following the appointment of Dr Paul Lavery to lecture in Coastal and Marine Management. For a supposedly marine person he still maintains an unhealthy interest in freshwater stuff.

The fieldwork for the MRHI has kept Kim Richardson, Pierre Horwitz and countless student volunteers busy for the last few weeks. Now that it is over, Kim is turning his attention to his Masters project which is likely to link in with the MRHI and Pierre is immersed in figures, data, tables and graphs from the analysis of his peatlands of the S.W. of W.A. work.

At the Department, a mesocosm facility is being constructed which I am intending to use over the summer (exactly what for is still open to question), this facility will be available for other research projects in the future. One of our research laboratories is due to be renovated into a wet lab before the end of the year. Paul and I are currently involved in setting up a nutrient laboratory. As a result, next year, the Department will be well equipped for aquatic research, with a dedicated lab, nutrient lab, GIS lab and a mesocosm facility. Things are looking up for aquatic research at ECU.

## NORTHERN TERRITORY

from: Michael Douglas

Well the big news for me lately wasn't exactly good. An unplanned fire on the South Alligator floodplain got out of control and burnt one of the control catchments (previously unburnt for five years) of the Kaplaga Fire and Water project. This means I lose a precious replicate for some of my analyses but fortunately, most of my field work was already completed. (Others weren't so lucky!). But apart from that set back, the work already carried out is starting to get analysed and producing some interesting results. It seems that late dry season fires produce pretty streams which have pools filled with lilies etc.

During the planned burning at Kapalga, we were visited by Gerry Quinn from Monash University. Gerry spent his days acting as a botanical field assistant, risking life and limb to measure fire behaviour only to while away the twilight hours defending his position on repeated measures ANOVA. Now if that's his idea of a *holiday*, doesn't it make you wonder what they do to him at work?

### Power and Water Authority, Water Resources Division

from: Simon Townsend

Jane Suggit commenced work with the Water Quality Branch of Water Resources Division in August as the Monitoring River Health scientist for the Northern Territory. This is a Federal government initiative, jointly funded by the N.T. government, to assess the 'health' of our rivers, based on macroinvertebrate surveys. Jane and Water Quality Branch staff have been busy selecting survey sites and are looking forward to leaving the office and getting out into the field. One hundred reference sites and 20 monitoring sites have been selected. These will be sampled at the end of the wet season and the end of the dry season over the next 2-3 years.

Simon Townsend and Kevin Boland presented papers at an international conference on tropical limnology held in Indonesia recently. The conference commemorated the 65th anniversary of the Ruttner-Theinemann limnological expedition to the then Dutch East Indies. About 120 delegates attended the conference, with most from Asian and European countries. The Austrian government was a major supporter of the conference. Many delegates had not considered Australia a tropical country, in fact one presenter when outlining the tropics on the map of the Asia-Pacific region excluded Australia. This lack of knowledge about the Australian tropics is not surprising, as most Australians would not be aware of the large proportion (40%) of the country within the Tropics.

**Environmental Research Institute of the Supervising Scientist (ERISS)**

from: Chris Humphrey

Readers should note that the old acronym, OSS (Office of the Supervising Scientist) ceases to be of much relevance to the ASL. The OSS is now the 'supervisory and assessment' body from the old organisation and, like ERISS, has become a separate branch of the EPA - both managed by the Supervising Scientist, Barry Carbon, who is also head of the EPA - got that. With the incorporation into the EPA have come changes to the ERISS. There are to be two research sections in the Institute, 'Impact of Mining' and 'Wetland Management'. While maintaining active research programs in Biological Monitoring and Ecotoxicology, the Wetlands section also has scope to broaden its outlook considerably. We envisage that this could include research into wetlands across northern Australia and potentially take in streams, billabongs, floodplains, mangroves and estuaries. Major topics or themes that may form the basis of the program include 'Inventory and Assessment', 'Threats and Management Issues' and even further ' Monitoring of Ecological Change'.

In determining our research priorities we plan to draw upon the accumulated knowledge and experience in northern Australia through an interactive workshop that will address the major wetland management issues in the wet-dry tropics and point to the main research questions. We will use this as a base for establishing out research program and over a few years expect to broaden both the scope and direction of our research. Thus, we expect to go through a reappraisal of our research priorities and establish a process to develop a new and broader wetland program which will indulge in wetland values, functions and processes under an umbrella of ecologically sustainable development! By the way, the workshop will be in February in Jabiru (see separate notice).

So there you have it. Back to the reality of the day. Chris Humphrey, Abbie Spiers and Barbara Klessa head off to the South Alligator River next week to commence sampling of invertebrates for the Monitoring River Health Initiative R&D project on 'Temporal variability of macroinvertebrate communities'. The MRHI team from the Power and Water Authority will also be sampling with us, initiating the NT agency program. ERISS will help the PAWA team out in the sampling and will provide taxonomic training and quality assurance/control for the data collected. ERISS will also be involved with another MHR R&D project on quality control/assurance for taxonomic identifications headed by John Hawking of MDFRC.

The big news: PLEASE NOTE the advertisement in this issue for the senior position for aquatic macroinvertebrate studies (arising from Peter Dostine's departure). Roll up, roll up, chance of a life-time! (You'll never, never know if you never, never... and all that.)

Finally on matters of the macroinvertebrate nature, the ERISS was visited in August by Australian Museum taxonomists, Winston Ponder and George (Buz) Wilson, and Vince Kessner, NT mollusc specialist. It was inevitable that Winston (freshwater molluscs) would be disappointed but Buz seemed to be picking up new phreatoicid isopods at many of the escarpment springs they visited.

The ERISS has been successful in a bid for funds from the Australian and New Zealand Environment and Conservation Council (ANZECC). The funds are to be used to revise those parts of the ANZECC Water Quality Guidelines that are deficient in information on trace metals in tropical Australian freshwaters, by way of results from toxicology studies conducted at the ERISS. The project will be conducted collaboratively with Scot Markich of ANSTO who also has considerable expertise in tropical aquatic toxicology.

Bob Pidgeon and James Boyden are currently analysing monitoring data on fish communities in lowland billabongs to evaluate the appropriate sampling effort for a redesigned study before the next sampling season. They hope to eventually apply a BACIP analysis using multivariate dissimilarity measures a la Faith, Humphrey, Dostine....et al. ...when they have enough temporal replication with the same design. In this regard Bob was privileged to hear Allen Stewart-Oaten's defence of the BACI-P design, in comparison to Tony Underwood's ANOVA model for detecting environmental impact, presented at the International Environmetrics conference in Canada in August. Suffice it to say that, among a long list of pro's and con's, one design was considered to be based in fiction: assumptions that are almost always known to be false! We hope it gets published soon- the debate was starting to get cold.

## NEW SOUTH WALES

### The Murray-Darling Freshwater Research Centre

from: Rhonda Sinclair

Russ Shiel and Lor-Wai Tan represented MDFRC among 100 participants from 28 countries at the VIIth International Rotifer Symposium. The meeting, a specialist offshoot from the much larger SIL meetings, is held every three years, in 1994 at the Hydrobiological Institute of the Polish Academy of Sciences, Mikolajki, Poland, 3-12 June. Russ presented a paper on Gondwanan rotifers, in collaboration with Dr John Green and Ian Duggan (Biol. Sci., University of Waikato, N.Z.), and co-authored papers on periphytic rotifers from Murray-Darling floodplain pools (with Ros Pontin, U.K.) and on Kalahari rotifers (with Dr Bob Brain, Transvaal Museum, South Africa). All three of the co-authors have had sabbatical or study visits to MDFRC.

Helen King and Chris Knight attended the Australasian Society for Ecotoxicology, Inaugural Conference, at the University of Technology on 23-24 June. The scope of projects addressed in the oral and poster presentations highlighted the requirement for an Australian Society for Ecotoxicology. Applications and protocols for toxicity assessment in the laboratory including cellular and genetic approaches, and in the field, were addressed with respect to Australian ecosystems and species. The Centre for Ecotoxicology at UTS is publishing a set of guidelines for toxicity testing using Australian species, which should be available in September this year. Whilst in Sydney, they inspected the Australian Water Technologies' imported, state of the art, fish ventilation monitor. This monitor has proved reliable for monitoring drinking water quality for a number of years, requiring minimal maintenance and providing a user-friendly interface. However, the signal processing operations in the software cannot be manipulated by the operator, like those in MDFRC's prototype monitor being used at the Australian Newsprint Mills.

Rob Cook resumed work at MDFRC on 11 July until 3 November to sort macroinvertebrate samples from the Rubicon and Lower Goulburn Rivers for the Victorian Environment Protection Authority.

A joint MDFRC, Dept of Ag, Dairy R&D Corporation, LWRRDC and Murray Goulburn Co-operative Co. Ltd Field Day was held at Crooke's property, Kiewa Valley on Wednesday 27 July. The theme of the field day was *Dealing with wet pastures: agronomic, environmental and economic issues.* David Mitchell and Greg Raisin discussed "Managing the nutrient runoff".

The Murray Darling Basin Ministerial Council Community Advisory Committee visited Albury on Monday 29 August and Tuesday 30 August. A BBQ was held on the banks of Ryans billabong on the Monday afternoon and the CAC members were shown the operation of field techniques at Ryans, followed by a tour of the laboratory.

Zygmunt Lorenz commenced working at MDFRC on 1 August. He holds a Masters Degree of Science in Oceanography, having graduated from Gdansk University (Poland) in 1986. After graduating he worked with the Sea Fisheries Institute: Division of Oceanography, Gdynia as a Scientific Officer, where he undertook research in the field of phytoplankton primary production and chlorophyll-a. At the MDFRC Zygmunt will be working with the infamous A-Team working on a range of projects, including fluorescence assay on nutrient limited algae and the effect of light-dark cycle on algal physiology and cell growth.

The MDBC Riverine Environment Standing Committee met in Albury from Monday 19 to Wednesday 21 September. On Wednesday 21, the members were taken on a field trip to Crooke's property (Kiewa Valley), where Greg Raisin discussed NRMS Project 202 - *Management of non-point source*

*pollution.* The group then travelled to Ryans billabong for lunch, following lunch they travelled to Mungabareena Reserve to examine of one of Judy Frankenberg's research sites in NRMS Project 210 - *River Murray bank erosion.* Following afternoon tea, Rod Oliver discuss NRMS Project 302 - *Rapid algal biomass* and NRMS Project 386 - *Darling River project.*

Mike Copland has taken up an NRMS grant for the next three years to work on two specific projects, as well as continuing to be the link person between the MDFRC, the MDBC and the schools throughout the Murray-Darling Basin. Following on from Mike's work with the Tennessee Valley Authority over the last year, Mike will be introducing a similar Water Quality Testing Program in the local area adding to the existing "Streamwatch" program. This means that "selected" student/teacher teams will undertake a training program and a project to do with water quality during their Year 11 biology and/or geography studies and participate in an international exchange with student/teacher teams from the Tennessee Valley. The first team from Georgia USA will be here around Easter next year. The second of the projects is to research, write, trial, produce and introduce to schools, a comprehensive set of curriculum materials on "irrigation" past, present and future in Australia.

Dr Paul Humphries has joined the CRCFE at MDFRC as a Research Fellow, employed by the Department of Ecology and Evolutionary Biology, Monash University. In collaboration with Lance Lloyd from WATER ECOscience in Melbourne, Paul will conduct an environmental flow experiment looking at the response of fish and invertebrates to a change in flow regime in the heavily regulated Goulburn River. This study, within the *Flowing Waters* Program of the CRCFE led by Sam Lake, will attempt to reimpose on the Goulburn River, a flow which aims to mimic a key feature of the natural regime which existed prior to regulation. A two-year pre- and three-year post-change period, along with regulated and unregulated control rivers will give the study considerable strength. Organisations collaborating in this study are MDFRC, NSW Fisheries, Monash Uni, Rural Water Corporation, WATER ECOscience and Canberra Uni. In addition, contributions from other groups, including Victorian DCNR, Murray-Goulburn Water and Victorian EPA will be essential for the success of the study.

John Green, at the University of Waikato, Hamilton, New Zealand, hosted Russ Shiel from 25 August to 11 September and Lor-Wai Tan from 4 to 11 September. Russ and John gave a paper at the 1994 meeting of N.Z. Limnological Society in Hamilton on 2 September entitled *"NZ's rotifers: a recent perspective"*. Wai spent her week shackled to the Hitachi field-emission SEM at the Waikato Microscope Unit, Ruakura, taking 500+ micrographs for her ABRS-sponsored project on testate amoebae. Russ managed to lever Wai away from the SEM for a few days to take micrographs of chydorid cladocerans for a second ABRS-sponsored project. Both are particularly grateful for the assistance of Alf Harris and Dave Wild at the WMU, and to

Biological Sciences at Waikato and the Meat Industry Research Institute of New Zealand at Ruakura for ready access to facilities.

National Water Week (NWW) will be held from Sunday 23 to Saturday 29 October 1994. The theme for 1994 is PROTECT; CONSERVE AND GET INVOLVED: remember, the future of water is in our hands.

Activities planned for Albury-Wodonga during the week include the following:
Supplement in the *Twin Cities Post* the week before NWW, with articles from various State Government departments.
Brian Scarsbrick, Chief Executive Officer of Landcare Australia Limited will deliver the 1994 Jonathan Mann Lecture at 8.00pm at the Wodonga Civic Centre Theatrette. The title of Brian's lecture will be *"Landcare - community action for change"*.

Murray-Darling Basin Commission Conference on *River Murray Mapping* at the Lake Hume Resort on Wednesday 26 and Thursday 27 October.
On Friday 28 October a Gala Day will be held in QE 2 Square, Albury from 11am-2pm. Activities will include: displays, Sunicrust Sausage Sizzle, Blue Thumb character, EPA Clean Water competition, presentation of prizes to school competitions and live radio broadcast.

## AWT EnSight - Stream Studies Section

from: Jane Growns

This edition will be somewhat shorter than usual, due to the unprecedented and frantic activity in Stream Studies at the moment. We are in the throes of the Spring sampling of 320 sites throughout most of NSW for invertebrates and/or epilithic diatoms for a total of seven different projects. Tracey McVea has been cheerfully coordinating the sampling and is still smiling, much to our amazement.

We are continuing most of our monitoring studies using macroinvertebrates (Adam Boey, Simon Williams, Tracey McVea, Dave Holleley), except for the Blue Mountains projects, and new projects include a subcontract to sample some of the Monitoring River Health Initiative sites (Jane Growns), a survey of the Hunter Valley (Amanda Kotlash, JG), several LWRRDC projects related to the MRHI (Julie Currey, Paul McEvoy, Rod Hardwick), IFIM application to macroinvertebrates (Ivor Growns, Dave Ross), effects of interbasin transfers on invertebrates and fish (IG, PM), environmental flow allocations for the Hawkesbaury-Nepean River system (IG, AK), application of rapid techniques to evaluate biodiversity (Ruth O'Connor).

Hugh Jones (he's been looking so tired since the wedding!) and Carla Kinross are finishing off the report on measurement of catchment stream water quality.

Pete Swanson and Maria Marzella are also sampling full steam ahead for their artificial macrophyte bed projects. Di Flett and Mike Manille are continuing their Shoalhaven water quality monitoring project and a scaled down version of the Blue Mountains automated water sampling programme. Di is writing up a report on the impact of STP's (sewage treatment plants) on catchment stream water quality.

We have also gained a new member - Brendan Atkins previously of the Floodplain Ecology Group, CNR has moved 'foreword' (readers of the IWS Series please note) and is now developing new projects for the group. In his spare time he's writing up (with other ex-FEG members) some of the grey literature about Gol Gol Swamp and other Murray wetland invertebrate communities for white (?) publication.

**Environmental Studies Unit (ESU)**
**NSW Department of Water Resources**

from: Mick Bales

The Aquatic Ecosystem Monitoring Group after a period of being relatively office and laboratory bound is now entering a phrenetic stage of field sampling being experienced by many groups working on macroinvertebrates at present.

Jennie Fenton, Michael Moroney, Juli Boddy and Renaye Skaines are at the moment undertaking a second sampling of macroinvertebrates and waterplants in the Clarence, Richmond, Brunswick and Tweed river basins in north-eastern NSW. The work is funded by the Natural Resources Audit Council. Reports indicate the sampling is going well despite problems with bushfires in the area. Sites in the Richmond catchment are also being sampled for macroinvertebrates as part of the national Monitoring River Health Initiative.

Julia Kimber, a temporary escapee from England, is at present accompanying Jennie Fenton and Renaye Skaines on the north coast trip. Julia is working on a project developing rapid field methods for assessing river health using macroinvertebrate and/or waterplants.

Meredith Royal after much hard effort wrestling with copious amounts of data finally gave birth to the 1993/94 Central and North West Regions Water Quality Program Biological Monitoring report. Many thanks to all of those in the AEMG who contributed to the report and thanks to Bruce Chessman and Terry Hillman for their comments on earlier drafts of the report. Meredith is now relieved to be able to get straight down to the next round of sampling and to thinking about the 1994/95 report.

Doug Westhorpe and Andrew Brooks continue with their LWRRDC funded project on the impact of pesticides from cotton irrigation on

macroinvertebrates. Apart from a few problems caused by the drought at the study site on the Mehi River (no cotton, no pesticides and no river !!) the project is continuing as planned. A new site on the Macquarie River is currently being studied.

Monika Muschal continues to work her way through many zooplankton samples collected as part of the LWRRDC funded biomanipulation study. The end of the samples is in sight (but then so are the stars!). Relief came to Monika in the form of a willing recruit (Renaye Skaines) who is working through the phytoplankton samples for the same project.

After weeks of spending more time away from Parramatta than there I have eventually managed to get 9 continuous days at my desk. Staff of the AEMG predict this cannot last, and they are right. Late in October I head north-west to the Darling, Paroo and Warrego Rivers as part of the MRHI. This will be followed at the end of November by a trip to the United Kingdom as a refresher course to remind me why I left in the first place. In addition to holidaying I will be meeting with scientists in the areas of biological monitoring and biomanipulation.

In other news from the Environmental Studies Unit., Paul Wettin says the Department of Water Resources has issued one of the ultimate challenges to limnologists (including the ASL conference). It wants to better define the environmental flow requirements of the Barwon-Darling River to ensure its health. It is fortunate and gratifying that several brave and intrepid experts have accepted this challenge. In upcoming months John Harris, Terry Hillman, Jane Roberts, Fran Sheldon and Martin Thomas will be trying to learn how to say Mungindi to Menindee rapidly 20 times without stuttering, but also the experience the beauty of the Darling in summer time during one of the worst droughts of the century, along with the odd consideration of fish, macrophyte, riparian vegetation etc. The Department, and presumably some of the rest of you, really look forward to the outputs from this work along with all those stories of bravery and intrepidness. Research directions are also a major part of their tasks and in fact Fran and Martin have commenced a pilot study along these lines.

Work has also started on an issues paper for the Macquarie Marshes as the first stage of the review of the Water Management Plan for the Macquarie Marshes. Finding a whole host of issues that need to be resolved but water supply to the marshes remains a central issue. The marshes team consists of Glenn Wallace, Sarah Bridges and Ruth Burlakov. The work is being managed by Jan Shaw with input on direction by Paul Wettin.

Many more things to talk about but already the report is too long. Sydney ASL members please look at the announcement elsewhere in the newsletter.

## University of New England

from: Michelle Casanova (while Geoff was in Ireland)

The field season has been slow to start here on the Northern Tablelands, although activity should hot up as fast as the weather from now on. Michelle Casanova has been appointed as a postdoctoral fellow for 4 years on a LWRRDC grant to look at plant establishment in wetlands. The contract was signed in early October so the summer looks set for field work and monitoring. The contract also has money for a half-time technical officer so that job will be advertised in the next few weeks. Anyone interested in the position should call Michelle (067-732324) for more info. Geoff Smith has been in Ireland attending a conference on aquatic weeds and visited Patrick Grillas in the Camargue (delta of the Rhone River, France) to see how their wetlands were managed. New diploma student Annabel Douglas-Hill is extending the farm dam survey on the Northern tablelands (a project that has been running cooperatively with Mick Bales and Monica Muschal from DWR in Sydney). Her first field day was a doozey with gale-force winds and heavy snow (in late September!). Not once since I've been on the rugged Northern Tablelands have I had to work while snow was falling, although breaking ice on the field site was an occasional chore. Margaret Brock has been busy with Endangered Species Committee meetings, external schools, seed banks and similar pursuits, while encouraging the rest of us to get organised. Andrew Boulton (up the road in Ecosystem Management) has been wowing the students with his own enthusiasm (wait until you see the impersonation of a green alga) and roping in various people for occasional lectures. He was at the River Geomorphology meeting in Sydney - 'a good chance to catch up with the perpetrators of the large amount of work being done in NSW rivers, but perhaps not publicised enough'. He has also been sampling streams and gravel bed rivers in the Bellinger and Macleay catchments for the CEPA program, and muttering things about gravel extraction and hyporheic bugs. Heather Mitchell, working with Andrew, has finished her study of copper, manganese and nutrients in Uralla reservoir and concluded that copper sulphate is probably being used a little too liberally. Sandra Grinter continues her woody work, and was last seen shredding a huge pile of leaf litter and sticks. Rob McCosker has been setting up grazing trials in the Gingham-Gwidir. Dorothy Bell is looking at coexistence of Eleocharis species and has been setting up grazing exclosures in local lagoons. Professor Shukla from Kanpur University in India is visiting the Botany Department and is thinking of looking at the algae in water bodies with and without willows. We Armidale limnos get together for a local meeting every month or so to keep up, catch up and criticise (in the nicest possible way). It makes this news item a little easier to write anyway!

## AUSTRALIAN CAPITAL TERRITORY

### Australian National University

from: Ralph Ogden

Patrick De Deckker's collaborative venture with Peter Gell (from Monash University Geography) and colleagues on the Holocene history of West Basin Lake in western Victoria has finally been accepted for publication in the Journal of Paleolimnology. Patrick will give a one day workshop at the Murray-Darling Freshwater Research Centre on ostracod identification in February 1995...be there as it will be a rare event.

Lynda Taylor has completed her survey of fresh to saline lakes in western Victoria (170 samples; major ion, dO, redox, temperature, pH, TON, TP, TOC, ostracods). This information together with isotopic and geochemical information obtained from fossil ostracod carapaces, will be used to reconstruct the environmental history of lakes in the Wimmera region. She intends to use geochemical models (NETPSATH, PHREEEQUE) to achieve a greater understanding of the hydrological forcing underlying biological changes in the lakes.

Finally, I am trying to wrap up my PhD on the ecology and history of eastern Murray Valley billabongs (emphasis on human impacts) by early next year. I am also attending meeting this month (Oct.) organised by Paul Bishop (Monash) with other people working on billabong sediments (Ivars Renfeld, Michael Reid) to see if we can create a regional statigraphic model for billabong sedimentation that can be used for environmental history and more practical applications (e.g. assessing the value of billabongs as sinks for nutrients and heavy metals).

### CRC for Freshwater Ecology

from: Ian Lawrence

*Environmental Flows Seminar*

Some 110 water managers, scientists and community group representatives participated in an Environmental Flows Seminar convened by AWWA. Following the Council of Australian Governments agreed Policy on Water Resources of February 1994 (which includes a requirement for the establishment of water entitlements for the environment). the question of determination of environmental flows has taken on a renewed urgency.

Papers presented at the Seminar ranged from case studies of flow-algal relationships, assessment of flows for specific ecosystems (wetlands) and for

indicators (fish), to presentations on assessment methodologies. The 'natural' flow versus 'negotiated' flow based approaches were debated at length, as were bottom-up (primary producers) versus top-down (fish) indicators. While no single methodology or indicator emerged from the Seminar as the basis for determining environmental flows, there was a broad consensus on an approach which comprised the participation of stakeholders in the assessment of options and their environmental, social and economic implications. This udnerstanding then provides a basis for progressing to an agreement on desired outcomes and environmental flow management strategies. A report which compiles presented papers and the findings of working groups will be available from AWWA later this year.

## South Australia

### University of Adelaide
### Botany Department

from: Kerri

Well the Botany Dept is getting wetter and wetter as George, our fearless commander, takes on more students. We have two new Honours students, Nina Johansen and Wendy Stubbs jammed into our office. Nina is working on Wonder plant *Triglochin procerum* to see if it grows as well with a nutrient rich water column as Michelle Bald found it did last year in nutrient rich sediment. Nina is also cutting the plants to see how they respond after harvest. Wendy is a Maths recruit and is modelling the 'windows of opportunity' (quickly adopted Ganfism) for *T. procerum* germination, establishment, survival and recruitment over the summer at Bool Lagoon. We wish both of them luck with the Honours grind.

Congratulations goes to Michelle Bald who has just received a Ph.D. scholarship from LWRRDC to further her investigations into the growth responses of *T. procerum* to nutrients. Good Luck! Masters student, Hannah Ellyard is nearing the end of her project on the management of the River Torrens catchment and has found that there has been limited useful data collected in the past. She hopes that with her input the management of the system will improve.

Kay Morris is well into her first set of experiments looking at the interaction between nutrients and salinity on the growth of *Bulboshoenus medianus*. She is currently rewriting scientific history as she proves that *B. medianus* can spontaneously generate, sorry Louis. Kay will test her ideas in the field soon by looking for a link between rates of photosynthesis, growth, (spontaneous generation) and salinity at Bool Lagoon. Marcus Cooling has moved on from the extraordinary *Villarsia* to look at *Baumea juncea*, a lignified emergent, to

see how it responds to water regime. Marcus will be using $^{14}C$ to determine whether *B. juncea* switches from photosynthesis in air to water when it is flooded. Marcus Brownlow is still cranking away on the dreaded thesis but the tunnel's terminus is becoming illuminated.

The Department of Microbial Ecology is enjoying success in its first year. Justin Brookes, my esteemed co-head and founding member of the Dept, is using fluorescent probes to look at the metabolic activity of cyano's and wants to predict the effect nutrient status has on growth rates. He is also looking at buoyancy regulation and gas vesicle synthesis. Sean Geary is becoming a real scientist now that we've had him away from the pseudo-medicos for a while and is tearing through the work for his project. Rumour has it that he rowed the boat on the last field trip, it didn't go anywhere but he rowed it. I've been going on my Ph.D. for 4 months now and am ready for field work. Just can't wait to plunge my hands into the collective waste of the Willunga residents and watch the methane bubble. I have also received a Trevor Prescott Memorial Scholarship from the Masonic Foundation to go overseas next year. At this stage it looks like I will go to SIL in Brasil then on to Aarhus to work with Brian Sorrell on plant pressurisation and methane release. Can't wait!

Finally our supreme leader, George recently received an Honourable mention from the Postgrad. Student Assoc. for their Supervisor of the Year Award. This was quite an achievement as their were 60 odd applications nominating 21 supervisors. Congratulations George, see we do love you!

**University of Adelaide**
**Zoology Department**

*Flinders Ranges Group*

from: Sam Wade

The Flinders Ranges research group has shrunk again. Congratulations to Peter Schultz who has landed a job at the E&WS as a wetlands biologist. Sam Wade has been hiding nutrient diffusing substrates in source, mid and sink sections of high and low nitrate springs. He has concluded that nitrate is the limiting resource for algae in most locations, except for high nitrate spring sources. Sam is currently erecting barbed wire enclosures to protect field equipment from tourists and stock during a nutrient addition experiment.

*River Murray Group*

from: Stuart Blanch

Keith Walker, lotic leader of limnetic renown has hung up his chalk for another year after finishing teaching third year Freshwater Ecology. He is now busy writing papers on the effects of river regulation on water levels in the Murray. Keith attended a conference on "Sustaining the Ecological Integrity of Large Floodplain Rivers" in late July in Wisconsin, USA, where he presented a paper on dryland river ecology. He thought the meeting was useful in developing our understanding of floodplain rivers around the world, and the importance of maintaining as many aspects of the natural flooding and drying patterns as possible.

Fran Sheldon took time out from lecturing and research to travel to Germany and surrounds, and New York where she presented a seminar on "Revenge of the Snails!" at the Institute for Ecosystem Studies, Millbrook, New York. Fran is currently examining organic matter accumulation and decomposition in the Darling River in western NSW. Together with Dr Martin Thoms from the University of Sydney's Geography Department, she hopes to study within-channel flooding, fluvial geomorphological processes and nutrient dynamics. All she needs is water!!

Marcus Wishart is 4 days from handing up his Honours thesis on nutrition and growth in the freshwater snail *Notopala hanleyi*. *N. hanleyi* is famous in South Australia's Riverland as being so abundant in several major irrigation pipelines to be considered a pest, whilst being extinct in the Lower River Murray, its natural habitat. Marcus tested the hypothesis that the C:N of food available in the pipelines, in which the periphyton are more typical of pre-regulation conditions than which presently occur in the Murray, is responsible for its existence there and absence in the River. His work suggests that other factors are also important in this species' decline in its natural habitat, such as sediment load.

Lorenzo Vilizzi is studying the population biology of the introduced European carp in the Murray. At present he is sampling juvenile fish weekly to measure growth and diet. He plans to verify his age determination method involving annuli (rings) laid down in otoliths, or ear bones, with mark and recapture studies in lakes adjoining the River. Such is his affection for carp he sports a paternal glow when discussing them!!

Adrienne Burns is counting algae from her study of periphyton succession at various depths in the River. Whilst hunched over her microscope, she can be heard to exclaim "Oh, Oh, it's a uh, it's a um, um, one of those ones with the wiggly patterns down the side". In amongst the algal counts are samples from a grazing experiment into whether the common beasts of the Murray, *Macrobrachium* and *Paratya* have a taste for periphytic slime. This time the

test was in the Laboratory to kept extraneous invaders at bay. Adrienne is counting down the days to her wedding on November 26. Ex-ASLer Giles Flower who studied wetland vegetation in South Australia's South East for his Honours with George Ganf is the lucky man. One wonders if in a few years time she will be referring to her wee bairns as "Oh, it's you, um, ah, you with the curly hair"?!

I am planning a study on the effects of various depths and subsequent exposure treatments on the sedge *Bolboschoenus medianus*. Low flows in the Murray have necessitated some changes to an existing field experiment concerning growth in the submersed herb *Vallisneria spirallis* in stable and variable water levels (due to the absence of variable water levels!). *Vallisneria* appears to die when exposed for 12-60 days over winter, depending on individual plants' ability to protect the basal meristem from desiccation with dried clasping leaf bases.

*Other Aquatic Bits*

from: Tara Ingerson
Over the past year the aquaculture of marron on Kangaroo Island (South Australia) has exploded. The enthusiasm of farmers involved in this industry is widespread which lead to the development of research programs on marron aquaculture this year. Dr Michael Geddes and Tara Ingerson from the Department of Zoology, University of Adelaide, will be investigating the establishment and growth of juvenile marron in aquaculture ponds with aims to determine methods for obtaining maximum productivity rates. This research will be in conjunction with Primary Industries (Fisheries) and S.A.R.D.I. who will also be investigating water quality of aquaculture ponds and marketing strategies in this area.

from: Dr Jenny Day
Senior Lecturer, Zoology Department; Director, Freshwater Research Unit, Zoology Department, University of Cape Town. President, South African Society of Aquatic Scientists. Research interests are ecology of small streams, wetlands, saline and temporary ponds but presently mostly involved in management of water quality for "the natural environment", particularly in the provision of water quality guidelines for the South African Department of Water Affairs and Forestry.

In Australia, I have been working with W.D. (Bill) Williams on quantifying the amount of dissolved organic carbon in some salt lakes. I have also been lucky enough to be invited on field trips to the Lower River Murray by Stuart Blanch, and the lower Darling River by Fran Sheldon and Martin Thoms. If all goes according to plan, I shall also be visiting some study sites in the Flinders Ranges with Sam Wade. Thank you, Adelaide limnos, for making me feel so welcome.

## PAPUA NEW GUINEA

from: Ian Roderick; Environment Department, Ok Tedi Mining Limited, P.O. Box 1, Tabubil, Western Province, P.N.G.

Well, here we are again with Christmas almost upon us. This can only mean one thing - the Annual report is due soon! This usually requires putting in quite a few extra hours, and I don't anticipate any deviation from that scenario this year. Anyway, on with the gossip.

There have been some personnel changes fairly recently. Ross Smith has returned to the fold to take up the position of Chief Scientist, which was created partially in response to the extra workload which the Department is now experiencing as a result of the litigation against Ok Tedi and BHP by some of the local landowners. I'm sure that he is keen to get down the river to do a bit of Barra and Bass fishing, however, so far he has been pretty well office bound.

Kayemen Bakowa returned from his stint at James Cook University earlier in the year where he was studying for a post-graduate diploma in Tropical Ecology. He has since submitted his minor project on the colonisation of artificial substrates by macro-invertebrates. Kent Hortle, who held the Senior Biologist position at O.T.M.L. in the mid-1980's returned for a two week visit as a consultant. I'm sure that he enjoyed revisiting Tabubil after such a long absence and catching up with old and new faces. Zoe Rosser will shortly be spending another 3 weeks here to collect more data for her PhD project. She is comparing the effects of different discharge regimes (Tabubil vs. North Queensland) on rates of invertebrate recolonisation of artificially disturbed cobble reaches in rainforest streams.

In addition to the regular monitoring studies which we do, a number of additional projects have been initiated. I am currently snowed under with large quantities of fish guts for a dietary study of various species occurring in the off-river water bodies. Boga Figa had commenced a small project investigating the benthic invertebrate fauna of a selection of off-river water bodies. Kayeman and Ross have dusted off the cobwebs from the hydro-acoustic fish sampling equipment in an attempt to resurrect this sampling technique. This appears to be going well, with some good calibrations with volumetric netting techniques being achieved. This month Andrew Storey is co-ordinating a waterfowl census of the middle Fly river floodplain are using a combination of aerial transects and ground surveys.

Em tasol ol toktok mi gat nau. Olgeta man na meri hamamas long gutpela Krismas na hepi Nupela Yia, na istap isi wantaim re wain!

# LETTERS TO THE EDITOR

Dear Editor,

I am writing you about the recent rumour that I have retired. I write to scotch such a miserable lie. It is true that I am no longer paid by the University of Adelaide and that I now have the freedom to tell the Dean of Science go jump in the lake should she ask me to sit on this or that committee. But as for being retired: nothing is further from the truth. The Head of the Department (Dr. Alan Butler, a marvellous man and handsome too) has provided the same space as I had; various facilities remain open for use; I will undertake a number of 'guest' lectures and continue to supervise students on a *de facto* basis; I will continue my research and other academic activities as before within the department (so, my address remains the same); and there is talk abroad that I will be given some honorary position to regularise matters. So, you see, the rumour that I have retired is indeed the miserable lie that I said it was!

As for the reasons for the new arrangements, me answer is simple. My mortal clock is ticking away and the number of projects that I have in hand grow by the minute. Besides, it is about time that senior citizens moved aside to make room for younger ones. I have been assured that there will be a replacement of my position. He or she won't be as good of course, but given time perhaps.....

And here is a message for my older colleagues. Do it too! The freedom is exhilarating, the moral high ground is bracing, and it may be too late tomorrow.

Best wishes,

Bill Williams

ps. Food parcels and used clothing can be sent to me c/o Department of Zoology, University of Adelaide. Thank you.

## POSTCARDS FROM THE SEDGE

### HUON VALLEY ON A SPRING MONDAY MORNING

A dim grey light seeps between the curtains, and arising, I find the snowflakes gently falling from a matt grey sky. Slipping on the frozen verandah boards I set out for the Huon Valley. Roadblocks are just being cleared and the roads are slushy with black gravelled snow. It begins to sleet in the valleys but on the ridges snow is still falling. Pasture is blanketed and the southern forests droop beneath its white weight. By the time we reach Mountain river (a tributary of the Huon) rain is falling on the valley floor, melting yesterdays snowpersons. The mountains are invisible behind curtains of sleet, obscuring the magnificent view of Sleeping Beauty, Collins Bonnet and Mt Montague.

I don wetsuit gloves and arms, woolly hat and wool socks over wool tights under wool pants under waders. The river rises in the mountains in an alpine marsh and rushes quickly down towards the sea. The catchment is small and there is no hyporheos. Dolerite boulders from the mountain tops roll over a Permian mudstone bed, forming series of cobbled riffles bedrock platforms and pools. I slither down the hillside to the rivers edge through ferns, mountain ash and blackwood, knowing that the rain is melting the snow, and that the water level is rising. The water is turbid and brown, and laps dangerously to the top of the stream channels so carefully monitored day after day.

When the weather is fine after snow the mountains sparkle and the water is cold, and the snow melts slowly. But when it rains the snow melts in hours and the river floods. This is characteristic of late winter and spring here - but the spates and the cold do not deter the biota. For August and September are when the algae grows best, in bright green blooms on bedrock and cobble alike, and the invertebrates flourish, grazing the algae and growing fat before summer emergence. Beneath the cold and turbid water, life teems. Alas the water rises and begins to roar, and I must retrieve the screens from the channels and make my way back to the lab.

Belinda Robson

Zoology Dept.
University of Tasmania

(if anyone wants to buy some used stream channels - phone Leon)

## CONFERENCE CAPERS

### FORTHCOMING WORKSHOPS AND CONFERENCES

- Initial Notice: **Third International Large Branchiopod Symposium** July 1996. The University of San Diego, California, U.S.A. Conference organiser is Dr Marie Simovich.

- **43rd Annual Meeting of NABS** (North American Benthological Society) will be held at the Keystone Resort, Colorado 30th May - 2nd June 1995. Abstracts are due by December 1st 1994. Further information (and the adress for Abstract submission) may obtained from Dr Cathy Tate, U.S. Geological Survey, Water Resources Division, Box 25046, MS 415, Denver Federal Center, Denver, CO 80225. Fax USA (303) 236-4912. The plenary session will focus on *Landscape Influences on Watersheds.* Note - there will be a special session on Southern Hemisphere Stream Ecology (see elsewhere in this newsletter).

- **Multidimensional Approaches to Reservoir Fisheries Management** organised by the American Fisheries Society, to be held in Chattanooga, Tennessee, June 12-14, 1995. Deadline for submission of abstracts is 1st March 1995. For further information or to submit an abstract, contact: Steve Miranda, Mississippi cooperative Fish and Wildlife Research Unit, P.O. Drawer BX, Mississippi State, MS 39762. Fax USA (601) 325-8726.

- **8th International Symposium on Trichoptera** to be held at Minneapolis, St. Paul and Lake Itasca, Minnesota, 9-15 July 1995. Total costs for regular participants staying in University housing will be approx. $US 407 - includes room, meals, transportation, reception. program and abstract book. Deadline for registration and submission of abstracts is 1st March 1995. For further information and registration materials contact: Ralph W. Holzenthal, Department of Entomology, 219 Hodson Hall, 1980 Folwell Ave, University of Minnesota, St. Paul, MN 55108. Fax USA (612) 625-5299. email: holze001@maroon.tc.umn.edu

- The Australian and New Zealand Chapter of the International Humic Substance Society (IHSS), together with the CSIRO Division of Soils and the University of Adelaide, are organising a national conference titled **"Organic Matter in Soils, Sediments and Water"** to be held on 5 and 6 December 1994 at the Waite Campus of the University of Adelaide.
  The aim of the conference is to provide a forum for the communication between those researchers in Australia and New Zealand who are concerned in some way with the study of organic matter in the environment. If you would like to receive the second notice (including registration forms etc)

please contact Dr Kaye Spark, Coordinator, Aust and NZ Chapter IHSS, PO Box 146, Golden Square, VIC 3555

- **Invertebrate Biodiversity and Conservation,** to be held at the University of Melbourne from 27 November to 1 December 1995. The conference will focus on issues relating to invertebrate biodiversity and conservation of invertebrates from marine, terrestrial and freshwater systems. Contact Dr Tim New at La Trobe University, Bundoora for more information.

- The Murray-Darling Freshwater Research Centre and the Cooperative Research Centre for Freshwater Ecology Seventh Taxonomic Workshop - **Microfauna and Crustacea** - to be held 8 - 10 February 1995 in Albury NSW. Enquiries to John Hawking, MDFRC, PO Box 921, Albury 2640. Ph: 060-43 1002 or Fax 060-43 1626. *More details in "Workshops".*

- To celebrate the centenary of the 1894 Horn scientific expedition to central Australia, the Invertebrate Survey Department of the Museum of Victoria is organising an expedition in October 1994 and in March 1995 to collect invertebrate fauna from four main study areas in central Australia. The areas chosen for study are: West MacDonnell Ranges (Simpsons Gap and Ormiston Gap National Parks), Finke Gorge National Park, Watarrka National Park (Kings Canyon) and Uluru-Kata Tjuta National Park (Ayers Rock and the Olgas). The Museum is calling for volunteers for the expedition and a registration form is available from Alan Yen at the Museum, phone (03) 419 5200.

- **Pre-Ramsar Workshop on "Wise Use of Tropical Wetlands".** Serious planning for an international workshop on wetland research and management, slated for the week preceding the March 1996 Conference of Parties to the Ramsar Convention on Wetlands of International Importance, has begun. The CCNT proposes to host the event, in Darwin, and expects the week to be divided about evenly between indoors sessions and field trips (weather permitting). The tentative theme is "Wise Use of Tropical Wetlands" and sub-themes may include pastoralism in wetlands and indigenous usage of wetlands. Many of the international participants will continue on to the Ramsar meeting in Brisbane.

- **"Ecology of Large Rivers" Conference** to be held in Krems in the Wacchau district on the Danube, Lower Austria, from the 18 - 25 April 1995. Organised by The Austrian Committee of the International Association on Danube Research and The Freshwater Biological Association and Danube University Krems. Papers are invited concerning the application of theoretical limnology to the management of large rivers. Information and registration forms can be obtained from Austrian Committee of the International Association on Danube Research, c/o G. Burget, Schiffmuhlenstrasse 120; A 1220 Wien/ Austria. Fax: 234591 15

- **The XXVI Congress of the International Association of Theoretical and Applied Limnology (SIL)** will be held in Sao Paulo, Brasil, 23 - 29 July, 1995. The theme of the Congress will be *Water as a limiting resource: conservation and magaement.* Papers from all aspects of limnology are invited. Registration closes 31 December 1994. Field excursions will be conducted during the Congress to the Amazon, Pantanal lakes, Parana River, and much, much more!! For more information contact R. Henry, General Secretary, University of Sao Paulo State - UNESP, Depto. of Zoology - Institute of Biosciences, C.P. 502, CEP 18618-000 - Botucatu - SP, Brazil.

- **Inland Waters Crustacea Specialist Group,** St Louis, Missouri, USA. 5 - 8 January 1995. Contact Denton Belk, Fax: 1-210-732-3943. *Further details in Announcements.*

- **Ecologically Sustainable Development of Wetlands in the Wet-Dry Tropics.** February 1995, Jabiru NT. For further details see the "Workshops" section of this Newsletter.

# CONFERENCE REPORTS

## SISORS II

From: Ian Campbell

SISORS II was held from the 3rd to the 6th of August in Ceske Budejovice, in the southern part of the Czech Republic. The acronym stands for Sixth International Symposium on Regulated Streams and the II arises since the Second International.... was SISORS I. The conference continues a series begun with a meeting at Erie Pennsylvania in 1979 the proceedings of which were published as "The Ecology of Regulated Streams" edited by Ward and Stanford. The proceedings of SISORS II are to be published as an issue of Regulated Rivers.

Ceske Budejovice is a very pleasant small town, in which a number of the institutes of the Czech Academy of Sciences are located. The conference was held in the meeting hall at the Academy, with most delegates being accomodated in a nearby student residence. The student residence was by far the best student residence I have stayed in at any conference. The building was only finished in May, and looked as though it had not yet been used to accomodate students. Four Australians attended the conference, Mike Shirley (late of Monash now of La Trobe University), and Chris Gippel and Mike Stewardson from Melbourne University.

Midday meals were included in the registration charge, and provided in the Academy dining hall. Most days they consisted of a plate of delicious meat and dumplings, although on a couple of days we had a delicious plate of dumplings and meat instead. At the welcoming function delegates were served carp - which was every bit as delicious as its Australian reputation suggests - Mike Shirley was particularly excited. It is amazing what you will eat after a bottle or two of peach vodka.

About 75 papers were presented in total, and encompassed a good mixture ranging from biological/ecological studies through hydrological/ geomorphological to engineering and management. The broad spread of disciplines represented was for me one of the conference highlights. There was also a strong representation of participants from former eastern bloc countries, including Hungary, Ukraine and Poland.

Interesting papers were presented by Patrick Armitage, on the effects of river regulation on mesohabitat, Merlyn Brusven on watershed planning using GIS, and John Brittain on remediation of regulated Norwegian rivers. James Ward discussed a major extension of the Serial Discontiniuty Concept that he has

developed with Jack Stanford and Geoff Petts gave an excellent summary/overview paper at the conclusion of the conference - I'm not sure how he managed to have slides prepared in advance to illustrate his talk - I have enough trouble when I know what I'm going to talk about. (Although there are some who would suggest that this assertion has never been tested). In spite of all the efforts of the biologists at the conference Geoff clearly still has great difficulty distinguishing invertebrates.

## SIXTH INTERNATIONAL SYMPOSIUM ON SALT LAKES
### Beijing, PR China

From: W.D. (Bill) Williams

The sixth International Symposium on Salt Lakes was held recently in Beijing, PR China (14-19 July). A large number of papers were presented. One session was devoted to papers on *Artemia* and these addressed matters concerning this animal and a final resolution was passed unanimously by the whole symposium.

The 6th International Symposium on Saline Lakes, recognizes that

1. the most important zooplankton organism found in saline lakes, the brine shrimp *Artemia*, is widely used as a critical source for live food in the larviculture of fish and shellfish, as well as a research model in many biological disciplines

2. the present knowledge about the distribution, biological and ecological characteristics, as well as the harvesting potential of *Artemia* is still very limited

3. the present annual needs for over 2000 metric tons of *Artemia* cysts for use in aquaculture is met by commercial harvests from only a few salt lakes, the most important one of which (the Great Salt Lake in Utah, USA) appears overharvested at times

4. many less-developed countries are importing brine shrimp for their aquaculture activities although they often have natural resources; furthermore several of these these countries have the potential to develop aquacultural activities with *Artemia*

5. there is a high risk of loss of indigenous species and genetic diversity as a result of indiscriminate introduction of exotic species, as already documented

Therefore the participants of the 6th International Symposium on Saline Lakes (Beijing, PR China July 14-19, 1994) unanimously resolved that the following should be undertaken:

1. the establishment of a long-term storage facility for *Artemia* cysts (i.e. encapsulated embryos capable of cryptobiosis) collected from all-possible habitats for use as a reference source in fundamental and applied research
2. identification studies about the occurrence, biological characteristics and harvesting potential

These approaches would ensure the conservation of this important organism and would provide opportunities for less-developed countries in Africa, Asia and Latin America to commercially develop this natural resource.

## GLASGOW OR BUST

From: Paul Humphries

It was with a large amount of trepidation and not a little nausea that I boarded the QANTAS flight to London on my way to the UK and the Fisheries Society of the British Isles Symposium on Predator-prey relationships in fish, in Glasgow. It had begun as a whim many months before and had accelerated into fact before I had had the time to really think all that much about it. As we flew over the vast Australian continent, it made me realise how isolated we are in this backblock of the world. In six hours it was just one big country, mostly desert, with the most spectacular topography visible from the air that I have ever seen. Uluru, like a large red birthmark on the bum of Australia, was the only real splash of vivid colour for thousands of kilometres. And then flying over south-east Asia, the Middle East and Europe, dozens of countries whizzed underneath in just a few hours.

This islolation was magnified many fold at the symposium itself, as Brits, Yanks and all sorts of Europeans rubbed smooth shoulders, discussed their latest research and commented on the fact that they hadn't seen each other for several months. I'd never bloody seen them! To say it was daunting for an inexperienced limnologist like myself would be an understatement. It was rather gratifying, however, (I think) to have a vertically challenged greek PhD student come up to me, introduce herself and tell me that she had read several of my papers and that I was much younger than she had imagined. Was this a pick up line? I will (I swear!) never know.

I arrived in Glasgow majorly disheartened by what I saw, after having spent three wonderful days in North Wales and then a picturesque but touristy day in the Lakes District. The city appeared large, relatively modern (for Britain) and dirty; somewhat like a visitor's first impression of Melboune must be. Over the next few days, however, I saw a different side to the city, with its ancient university and its unbelievable museums. And could the Brits put on a do or what? The first reception was in the halls of residence and people mingled happily, while I stood, my usual bashful self, in a corner drinking a rather tasty drop of Australian red called 'Barramundi' and hailing from NSW!!!. But subsequent receptions and dinners etc were held in such wonderful surroundings that one could mingle and ogle as much or as little as one wished.

But back to the symposium itself and the papers. Approximately 40 oral and 30 poster presentations were given during the 3.5 days of the symposium. The first day was devoted to fish as predators, the second to fish as prey and the third and half of the fourth to interactions between the two. Much of day one was spent dealing with the way fish detected and captured their prey, with invited papers by Horst Bleckman from Germany (lateral line stuff) and Frietson Gallis from the Netherlands (relationship between morphology and

behaviour during ontogeny and evolution) emphasising structural aspects of predation by fish.

That night we were welcomed by a very nervous representative of the Lord Provost of Glasgow in the Burrell Museum who attempted (but failed, bless her!) to make amusing comments about predators and prey. The collection housed an enormous number of Greek, Roman, Chinese, British and Indian relics dating back to thousands of years BC. This Burrell joker had spent his life tripping around the world collecting everything imaginable: bits of walls had been hacked out of tombs, collosal tapestries ripped off walls, ceramics and figurines that would be worth a former prime minister's ransom, Renoirs and Degas, you name it, it was there. The guy must either have been very rich or a crook; either way, you couldn't help but admire his taste!

Many of day two talks dealt with the behaviour of prey (especially foraging) in the presence of a predator and variations on this theme. Prey variables, such as level of satiation and presence/absence of refuge were altered and behaviours noted. One study attempted to determine if predators preferentially attacked 'odd-looking' fish and whether 'odd' fish preferred similar fish to themselves or didn't give a stuff. Now I know why I was always targeted by bullies when I was at school. Invited papers were by Andrew Sih (Uni. of Kentucky) who discussed the mating behaviour of water striders in the presence or predators and ineffective anti-predator behaviour, such as hiding from predators that aren't there; and Lee Fuiman (Port Aransas, Texas) who showed that ontogeny had a major role in the level of responsiveness of fish larvae to capture avoidance. A very nice study (Matthew Mesa and co., Culumbia River Reseasrch Lab) examined the susceptibility to predation of stressed fish: i.e. fish which are in poor condition due to the effects of pollution.

The third night (which I didn't attend) was devoted to a 'Ceilidh' or scottish dance. By all accounts it was a most enjoyable night, with the usual post-moretums sprinkled throughout the subsequent day's talks. I ended up watching the Itlay vs Sweden World Cup semi-final, surrounded by an Italian contigent to the conference. It was odd, but once I found that they actually hailed from Sicily, I began barracking loudly and heartily for the Italian team and was very relieved that they won.

Day three commenced with a highly entertaining paper by Don Hughie and Lawrence Dill (Simon Fraser Uni, BC) which used game theory to look at responses of fish to differential food availability and predation risk. This type of approach appealed to me and deserves more attention. A notable study looked at whether predators could detect and preferred to attack different sizes of schools of prey. Another by Francis Juanes (Uni of Massachustts) examined the generally accepted idea that there is a positive relationship between predator and prey size. Juanes showed that this was by no means as prevalent as people normally assume. The larger-than-life Jim Gilliam (North Carolina

State Uni.) presented his invited paper on flexible life histories in relation to growth and reproduction and predation risk with a flurry of equations, usually lost on an amath like me. But I actually understood and enjoyed his talk and realised that such theoretical studies can be made interesting. Some more fisheries-related papers followed, which was quite refreshing in some ways, seeing as many of the preceeding papers were lab-based.

The next night was the symposium dinner, held in the university dining room. The fair was excellent, with marinated venison gliding down the oesophagous, liberally lubricated with lashings of lovely lambrusco and served simultaneously by several sultry scottish sirens. Then we moved on to a pub which served more types of beers than Alexander Downer has left feet (i.e. 10). I was encouraged, after several Guiness to try a 'small pint' of 'Old peculiar' by an Irish delegate who insisted that this particular beer was the next best thing to mother's milk. Having been a '60s formula-is-fabulous baby I decided to attempt to regain some of that lost I.Q. After the first mouthful I dubbed it 'Banana beer' because it had the distinct taste of, you guessed it.....bananas. Nobody seemed to believe me, and just put my ravings down to excessive doses of UVs back in Orstralia. Next day, while I attempted to stave off a case of the 'jeese-I-feel-like-shit' syndrome and get something from that day's talks, my Irish friend from the night before just giggled quietly to himself and occasionally whispered the word "banana" in my shell-like.

The highlight of the last day was a paper by Jim Kitchell and co. (Uni. of Wisconsin) who gave a lovely and lively presentation on whole lake manipulations and how "...prey selection by predators alters habitat selection behaviours or prey species as well as their abundance, size distributions, life histories and the consequent effects on their own prey resources." His melding of theory and empiricism was a pleasure to experience and it was obvious to all that the success of his team's work was a function of testing theory at the ecosystem level; a difficult, expensive but very rewarding exercise.

I came away from the conference convinced of the importance of taking into account the relationships between fish and their prey when performing any type of community study, whether it be basic or applied. There was considerable discussion regarding ways to link the relatively unrealistic lab-based experiments with the real world. Some experiments performed at larger scales and in the field were inherently more satisfying to me, having worked on field-based studies for much of my pathetic career. This doesn't mean that small-scale experiments don't have their place, but the general feeling at the symposium was that field- and lab-based workers need to get together more. The president of the FSBI, John Blaxter, in his closing address to the symposium, warned of the dangers of using terms like 'choice' and 'preference' to fish and prey and that some researchers may be anthropomorphising what may actually be simple mechanistic responses to particular stimuli. I tend to agree with some of what he said. There is no doubt that fish and prey can

detect and respond to quite subtle diffferences in food availability, habitat-type and predation risk, but the impression I get is that researchers are looking for and expecting their study animals to respond in particular ways and for specific reasons. When they respond in the ways predicted, the conclusion is that there was an unambiguous cause and effect. This may not always be the case, as Blaxter is suggesting. It goes without saying that we need to remain as objective as possible in the interpretation of our experimental results and look for every possible alternative explanation.

A long and beautiful bus trip to Oban and the Dunstaffnage Marine Labs in the west of Scotland completed the conference and left me with enough time to see Edinburgh and its castle and York and its Minster before winging my way back to Hobart. As I sat at the breakfast table in the B&B in York, on my last day in the UK, it occurred to me that predator-prey relationships have more relevance to our everyday lives than we might imagine. For example, my hunger forced me down to the dining room of what was a lovely place to stay but which was run by a very intimidating woman who reminded me of a primary school teacher I once had. So I risked the predator-like intimidation of this Grendal-like woman to eat, wolfed down my continental breakfast before retreating to the refuge of my room and later the open road. Had I not been so hungry, I would probably have payed my bill and left without eating. A clear example of the trade-off between foraging and predation risk.

## AWWA Seminar on Environmental Flows
## Canberra, 25-26 August 1994

Report from: Stuart Blanch and Adrienne Burns, University of Adelaide.

The Australian Water and Wastewater Association (AWWA) convened the seminar to facilitate discussion, provide an avenue for the presentation of ideas on research and management, and work toward developing a rationale for environmental flows. Present at the meeting were researchers, water resource and environmental department officers, policy makers, hydrologists, consultants and conservationists, representing many and varied organisations: MDBC, LWRRDC, Local, State and Federal Government Departments, ACF and Inland Rivers Network, Universities, consultants and CSIRO.

Papers and posters were presented on environmental flows in regulated and non-regulated systems, reservoirs and downstream release, and groundwater-surface water exchange. There was a general feeling that flow allocations for environmental purposes were desirable and increasingly necessary (in the light of increasing demand for water from all sectors) albeit hard to "do", in terms of required quantity and quality of water, research, timing, policy and legislation, delivery and monitoring. A workshop following the seminar aimed to refine this complex proceedure by discussing community consultation, research, hydrograph analysis, "risk analysis", modelling, delivery and monitoring flows. Some contention arose concerning the method of determining environmental flows; whether via research aimed at determining key species' requirements, via an 'holistic' framework which considers all biotic needs, or by attempting to reinstate the pre-regulation flow regime following Flow Duration Curve analysis with subsequent finetuning based on biological responses and supply requirements. Comparisons of various methods of determining individual species' and habitat flooding requirements were reported, ranging from labour intensive and expensive field surveys to the expert panel method.

General consensus was reached that an holistic approach to flow management was imperative. The allocation of flushing flows to wash toxic cyanobacterial blooms further downstream was generally agreed to be a water resource issue rather than an environmental flow issue. Accordingly, releases from storages for such purposes should not come out of 'environmental flow budgets'.

Despite being newcomers to the AWWA scene and raw postgraduates to boot, We found the seminar extremely interesting and profitable. Information and Proceedings can be obtained from Sharon Barclay, AWWA Secretary, PO Box 388, Artarmon, 2067, NSW. Fax (02) 413 1047.

## WORKSHOPS

### ECOLOGICALLY SUSTAINABLE DEVELOPMENT OF WETLANDS IN THE WET-DRY TROPICS

**Date:** February 1995

**Location:** Jabiru, NT

**Format:** The workshop will comprise short papers (20-30 minutes) on wetland management issues from an array of wetland managers, researchers, users and owners. Breakout discussion sessions will be used to identify priority research areas.

Papers are invited on the following broad topics:

- Inventory and Assessment;
- Threats and Management Issues
- Monitoring of Ecological Change.

The papers and a summary of the discussions sessions will be published by ERISS.

**For Further Information Contact**

WETLAND WORKSHOP,
ERISS,
Private Mail Bag, Post Office,
Jabiru NT 0886

Ph: 089-799711
Fax: 089-792076
email: stephh@oss.erin.gov.au

# SEVENTH TAXONOMIC WORKSHOP

## 8 - 10 FEBRUARY 1995, ALBURY

## MICROFAUNA & CRUSTACEA

**Guest Speakers**

Dr Russell Shiel (MDFRC)
Dr Pierre Horwitz (Edith Cowan University)
Dr Patrick DeDeckker (Australian National University)

**Venue and Date**

⇒ The workshop will be held in the Albury-Wodonga Development Corporation's Board Room, adjacent to the Murray-Darling Freshwater Research Centre's (MDFRC) laboratory, Ellis Street, Thurgoona, via Albury NSW. MDFRC is now part of the Cooperative Research Centre for Freshwater Ecology.

**Costs**

⇒ A registration fee will be charged to offset the cost of reproducing the taxonomic keys, travel and accommodation for the guest speakers, morning and afternoon teas.

⇒ Registration Fees: Participants $100.00 Full Time Students $50.00

⇒ Proceedings of the Workshop will be published as identification guides and will be available for by non-attendees.

**Registration**

⇒ Registration is essential for the successful organisation of the Workshop and it would be appreciated if participants could notify the conference organiser or their intention to attend by Friday 25th November 1994. The registration fee must be also paid by the 25th November. Please make cheques payable to the Murray-Darling Freshwater Research Centre.

**Conference Enquires**

⇒ Mr John Hawking, The Murray-Darling Freshwater Research Centre. PO Box 921, ALBURY 2640. Phone 060-43 1002 or Fax: 060 43 1626.

**Accommodation**

Accommodation is the responsibility of the participant. Listed below are motel, hotel and caravan park accommodation near the Centre.

*Thurgoona Country Club Motel. Phone 060-43 1666* (Walking distance to MDFRC)
*Sodens Hotel-Motel. Phone 060-212 400* (8 km from MDFRC)
*Siesta Motel. 060-25 4555* (5 km from MDFRC)
*Trek 31 Tourist Park. Phone 060-25 4355* (4 km from MDFRC)

## MICROFAUNA & CRUSTACEA WORKSHOP PROGRAM

**Wednesday 8th February 1995**

9.00am "Welcome" Dr Terry Hillman, Director MDFRC

9.15am to 5.15pm
Session Speaker: Dr Russell Shiel
"Major keys to the aquatic microfauna"
"Classification and identification of Rotifers"
"Classification and identification of Cladocera"
"Classification and identification of Copepoda"

7.30pm Dinner, Vaccari's Restaurant

**Thursday 9th February 1995**

9.00am to 5.00pm
Session Speaker: Dr Pierre Horwitz
"Identification of the groups/orders of Malacostraca"
"Identification of the Syncarida, Amphipoda, & Isopoda"
"Identification of the families of Decapoda"
"Identification of the species of Decapoda"

7.30pm Dinner, Thai Lotus Restaurant

**Friday 10th February 1995**

9.00am to 3.30pm
Session Speaker: Dr Patrick DeDeckker
"Introduction to Ostrocod dissections"
"Ostrocod Taxonomy"
"Identification of Ostrocod species"
"Identification of attendees specimens"
4.00pm to 4.30pm
Concluding Speaker: Mr John Hawking
"New Taxonomic keys"

# 60 MINUTES

## ASL Executive Teleconference, 12 August 1994

**Present:** M.Barson, G.Closs, M.Douglas, S.Blanch, B.Congdon, J.Growns, L.Barmuta, P.Boon, M.Brock, M.Hart, P.Humphries, R.Marchant

1. **Finances:** a financial statement was presented by the treasurer (see attached summary). The current membership was just over 500. The executive agreed that a special requests budget of about $1000 was appropriate. Annual dues notices would be sent out soon. These cover the period September to September. As this is now out of synchrony with the financial year (Jan-Dec) a pro-rata charge would be made to bring them into line with the financial year.

2. **Biodiversity council:** R.Marchant attended a meeting to discuss the formation of such a council. A summary of the outcomes of this meeting is attached. The executive supported the formation of such a council and noted that the idea behind the council was close to one of the topics (conservation of aquatic biodiversity) that the ASL had already identified as important. The steering group of the proposed council has written to the ASL requesting a donation to enable the council to be set up. The executive agreed to donate $1000 for this purpose. Donations can also be made by individual members of the ASL: a note to this effect will be included when dues notices are sent. R.Marchant agreed to look after correspondence with the council.

3. **FASTS:** M.Brock has written to FASTS inviting the director to attend the next ASL AGM. The director is willing to come but needs to know what issues the ASL wants discussed. L.Barmuta will draw up a set of possible topics and fax the list to the executive. Final lists should be sent to M.Brock within the next three weeks.

4. **ASL profile:** No new names have been sent to the secretary for inclusion on the list of members who are willing to speak as experts on specific topics. It was suggested that the "shopping" list of topics that the ASL identified as important should be republished in the newsletter. L.Barmuta mentioned that there was to be a review of the functions of museums in Australia. M.Brock will telephone FASTS to find out more about this before determing whether the ASL should comment. Water allocation in NSW for wetlands was also a topic on which the ASL might like to comment.

5. **Special publications editor:** B.Knott was nominated by P.Horwitz for this position at the recent congress in WA. The secretary will write to Knott confirming this.

6. **Ph.D scholarships:** M.Brock has written to the Federal government complaing about the proposal to tax these scholarships. She will send an account to the newsletter.

7 **1995 ASL congress:** the current position was summarised by J.Growns. The congress will be held on 17-20th Sept 1995 at the Jenolan Caves House. Two levels of accomodation are available: $118 or $160 for three days (including breakfast) plus $70 for three evening meals. Some sponsorship has been obtained which will be used to subsidise students to enable them to attend. The CRC for Freshwater Ecology may hold a workshop immediately before or after the congress at the same venue.

8. **Other business:**

(a) P.Humphries suggested that the ASL might sponsor a workshop on the Americain methods for determining instream flow needs. He will find out more details and make a formal proposal to the ASL.

(b) M.Brock spoke about the need for a "personal" touch from the society when recognising or acknowledging significant events in members' careers or lives. In the past such matters have been handled by the secretary or the president. Perhaps in the future such acknowledgement could occur at an ASL congress e.g. special session to commemorate someone's retirement.

## AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

**Financial Statement** **January - July 1994**

**General Account**

| | |
|---|---|
| Balance b/forward | 10978.24 |
| Receipts | 11576.56 |
| Payments | 17871.00 |
| **Balance 31/7/94** | **4683.80** |

**Other Accounts**

| | |
|---|---|
| ANZ Trustees | 38255.46 |
| Term deposit a/c | 3552.64 |

**Major income other than subscriptions:**

| | |
|---|---|
| Transfer from Call deposit | 1000.00 |
| Profit from WA congress | 3532.08 |

**Major payouts:**

| | |
|---|---|
| Congress (1993) for printing | 1010.60 |
| Congress (1994) travel awards & prizes | 1920.00 |
| Newsletter printing & postage | 2693.00 |
| Telephone conference | 653.00 |
| Auditor | 500.00 |
| FASTS | 1652.00 |
| Hon. | 1000.00 |
| CSIRO journals | 5370.00 |

**To pay:**

Special publication printing 4500.00
Newsletter (Aug) a/c/ yet to be recieved
Newsletter postage 389.00

Margaret Hart.

# ANNOUNCEMENTS

## SIL CONGRESS 2001

The bid put up by ASL for the 2001 International Society for Limnology (SIL) Congress to be held in Melbourne has now been formally accepted. SIL Congresses are held every 3 years, with the next two being held in Sao Paulo, Brazil next year and in Ireland in 1998. SIL was previously held in New Zealand in 1987, and attracted over 700 participants, so we can anticipate 1,000 or more participants in Melbourne in 2001. We can also anticipate that, as 2001 draws closer, many Melbourne based members will be seeking positions in other states or countries, or at the very least looking for attractive locations for study leave for a year or so.

A National Organizing Committee and a local arrangements committee will be established over the next few months, to whom I will pass on the pile of advertising brochures from hotels and tourist traps which are already accumulating in my office.

Ian Campbell

## SOUTHERN HEMISPHERE STREAM ECOLOGY AT NABS 1995

The North American Benthological Society (NABS) will be holding its 1995 meeting in Keystone Colorado in early June 1995. In recent years there has been an noticable increase in "foreigners" at NABS meetings, with Australians and New Zealanders particularly prominent, partly due to their numerical abundance and partly due to their rowdiness (the New Zealanders that is). In 1995 a number of South Africans are hoping to attend NABS, and I have discussed with the organizing committee the possibility of running a session on Southern Hemisphere Stream Ecology. They are very enthusiastic (partly because one member of the committee is working on streams in Antarctica) so I am now inviting expressions of interest from and Australians (or others) who may be interested in participating. NABS meetings are probably about the best meetings around for stream ecologists,
and Keystone, a ski resort, is said to be very pretty.....

Anyone interested, or who would like further information can contact:
Ian Campbell
DEEB, Monash University,
Clayton 3168
Email at mirawara@ccs1.cc.monash.edu.au

# OVERVIEW OF WORKSHOP OUTCOMES[1] PROPOSED AUSTRALIAN BIODIVERSITY COUNCIL Melbourne, June 1994

In March 1994, a short paper was circulated proposing the establishment of an Australian Biodiversity Council to be a scientific advocate for the conservation of biodiversity. The positive response to the paper resulted in a workshop on 25-26 June. Participants included scientists representing 17 scientific societies, several centres and departments, and interested individuals.

**The meeting supported the formation of an Australian Biodiversity Council and nominated a steering group to oversee the next steps, with a view to establishing the Council in November 1994.** Members of the steering group are: Andrew Beattie, Margaret Blakers, Shelley Burgin, Phillip England, Pat Hutchings, Susan Lawler, Ian Noble, Tony Norton, Phillip Tracey.

**The workshop supported the following goals and structure for the Australian Biodiversity Council as a basis for further work.**

*Goals*

The Council provides a focus for:

1. Advocating the scientifically-based conservation of biodiversity.
2. Informing Australians of the importance, values and benefits of biodiversity.
3. Promoting the integration of scientific expertise into political, social and economic contexts.
4. Promoting policies and mechanisms for the conservation of biodiversity.
5. Stimulating informed public discussion of biodiversity as part of decision-making processes.
6. Promoting multi-disciplinary forums for Australian scientists concerned with biodiversity.

*Structure*

The Australian Biodiversity Council comprises four elements: the Council itself; an Assembly which selects the Council and is itself composed of delegates from the scientific societies as well as nominated individual scientists; the participating scientific societies; and a secretariat which services both the Council and the Assembly.

The Council would have about 10 members, empowered to act independently rather than directly representing the societies. It should be able to act quickly and decisively, and its members should be selected for their personal commitment, expertise, 'charisma', and credibility. The purpose ofthe Assembly is to link the scientific societies and the Council, while preserving the independence of both. It also provides a means of involving people, fostering debate and encouraging networking.

*Funding*

It was recognised that to be effective the Australian Biodiversity Council will need to be well-resourced. Participating societies should be requested to donate a one-off foundation contribution (perhaps around $2 per member), and to provide access to their mailing lists for a fundraising mailout to support establishment of the Council. Funding will also be sought from other sources.

*Next steps*

1. Request societies to give in-principle support to the for nation of the Australian Biodiversity Council along the lines agreed at the workshop, and to contribute to the establishment costs.
2. Steering group to develop proposals and oversee formation of the Assembly and Council.
3. Aim to establish and launch the Council in November 1994.

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[1]Prepared by Margaret Blakers, Margy Gaynor, *Mick Keough*, *Gary* Pore
C/- Margaret Blakers, 20 Heller St, Brunswick Vic 3056; Ph. (03) 380 4072

## SA Members take a look at Biodiversity and FASTS

The following information was circulated around SA ASL members, and their opinions sought regarding the Biodiversity Council and FASTS.

### 1. Proposed support for the newly formed **Biodiversity Council**

Aims of the Council are:

◊ Input scientific viewpoint into the discussion on biodiversity in the wider community,
◊ Advise government on issues relating to biodiversity,
◊ Form guidelines for the management of biodiversity, and
◊ Educate the public on the importance of our biological diversity.

- Will be launched November '94.
- Initial outlay approx. $40 000.00, all from donations (no govt funding), to cover rent and some wages and equipment for an office in Canberra.
- Will require ongoing funding in future years (less than the initial contribution however).
- 13 members on the Council, drawn from all areas (30 Australian scientific Societies have agreed to support the Council).
- Richard Marchant (ASL Secretary, Museum of Victoria) has agreed to be the temporary correspondant with the Council.
- The ASL regularly supports various projects, up to approx. $1000 per year.

Please indicate your views by ticking one or more of the options:

1. I agree **in principle** to the ASL supporting the Biodiveristy Council
2. The ASL should **financially** support the establishment and ongoing costs of the Council
3. I agree to an **initial contribution** of $2 per member (approx. 500 members, hence total support of around $1000), plus a reduced yearly contribution.
4. Other suggested contributions??

### 2. What do you want from **FASTS?**

**FASTS** (Federation of Australian Scientific and Technological Societies) receives a fee to lobby government on behalf of its member societies, of which ASL is one (see last Newsletter).

1. Are you satisfied with the level of representation the ASL receives from FASTS?
2. Are you aware of what they do? (If not, see the last Newsletter).
3. Do you have any questions for FASTS, concerning the level and quality of representation we receive, or remarks you want addressed to FASTS? Indicate below:

## INLAND WATERS CRUSTACEA SPECIALIST GROUP ESTABLISHED WITHIN THE SPECIES SURVIVAL COMMISSION OF IUCN - THE WORLD CONSERVATION UNION

From: Anostracan News Volume 2, Issue 1

The proposal aimed at setting up a specialist group for Anostraca within the Species Survival Commission of IUCN reported on in the first issue of Anostracan News last year took a different direction than envisioned by those whose idea it was to form such a group when Dr. Tim New, Chairman of the Invertebrate Conservation Task Force, and Dr. George B. Rabb, Chairman of the Species Survival Commission, suggested that forming a specialist group for all inland waters Crustacea would be the best way to go. Within the framework of a specialist group focusing on the conservation needs of all nonmarine crustaceans, subgroups can concentrate their attention on specific taxa. This seemed like a sound suggestion and was accepted by Dr. Denton Belk who has been appointed as Chairman of the newly formed Inland Waters Crustacea Specialist Group for the 1994 - 96 IUCN triennium.

Dr. Belk is asking the board of The Crustacean Society to provide space in their newsletter for the Inland Water Crustacea Specialist Group. This request is expected to be successful. *Anostracan News* is now the newsletter of the Anostraca Working Group.

Please write Chairman Belk if you are interested in being a working member of the IWCSG and the AWG. The inaugural meeting of the IWCSG will be held during the TCS/ASZ annual meeting in St. Louis, Missouri, U.S.A. 5-8 January 1995.

Denton Belk
840E Mulberry Ave
San Antonio
Texas 78212-3194
USA

Phone: 210-732 8809
Fax: 210-732 3943

## PROPOSAL TO ESTABLISH A SYDNEY BRANCH OF THE ASL

Mick Bales
Senior Biologist
NSW Department of Water Resources
Telephone 02 895 7359

After many years in which Sydney was a relative backwater in terms of the numbers of limnologists and ASL members, there has been a dramatic increase in our numbers over recent years. Discussions with some Sydney ASL members have identified a desire to meet and discuss topics of mutual interest. This could be a valuable forum for the future development of limnology in the Sydney area.

### INAUGURAL MEETING

7th Floor Conference Room
NSW Department of Water Resources
10 Valentine Avenue, Parramatta.

3:00pm-5:30pm (plus a social event later)
23rd November 1994

*Objectives;* To decide on the form, the role, the objectives etc. of the Sydney ASL Branch.

Please contact me for more details on the first meeting and with ideas for the future.

## CALLS FOR HELP

# WANTED

## Invertebrate locality records for Tasmania

**Have you collected terrestrial or freshwater invertebrates in Tasmania since 1970? If you have we would like to hear from you as soon as possible.**

On behalf of the Australian Heritage Commission we are collating and mapping all available high quality locality information on Tasmanian non-marine invertebrates. The aim is to summarise information at different levels of content from a general level (where have collectors of different taxonomic groups been?) to the specific (where has each named species been found?).

All information that we accept will be coded to indicate the wishes of the provider on confidentiality, this will be dilligently respected. Data will be routinely plotted on the scale of ten kilometre grid squares only, no greater details will be released for any record without the written consent of the data-owner.

All contributors will of course be acknowledged in our report, this section is already shaping up to be a Who's Who of invertebrate specialists!

For more information and contributions please contact either:


| **Project Officer** | **Project Leader** |
|---|---|
| Dr Bob Mesibov | Dr Tim Kingston |
| P.O. Box 700 | Queen Victoria Museum |
| Burnie, TAS 7320 | Wellington Street |
| | Launceston TAS 7250 |
| Tel. (004) 313428 | (003) 316777 |
| Fax. | (003) 371117 |

## PERSON WANTED

ENVIRONMENTAL RESEARCH INSTITUTE OF THE SUPERVISING SCIENTIST
Jabiru, Northern Territory
WETLAND MANAGEMENT SECTION
BIOLOGICAL MONITORING PROGRAM
PROFESSIONAL OFFICER Grade 2
SENIOR PROFESSIONAL OFFICER Class C
Salary range: $37,188-$47,814

The Environmental Research Institute of the Supervising Scientist is a branch of the Environment Protection Agency and performs research on the protection and management of wetlands, and the protection of the environment from the impact of mining operations. Jabiru is located 260 km east of Darwin within Kakadu National Park. Though remote, it has a population of about 1400 and provides all the community facilities expected in a modern town including schooling, child care and medical service. Local residents of the Region have available to them pastime activities such as boating, fishing, photography, bird watching, bush-walking and studying Aboriginal art sites. Jabiru also has an olympic swimming pool, a sports and social club and a golf club.

Enquiries: Duty statement, selection criteria and information on conditions of service can be obtained from Daryl Lehmann on (089) 799730 (or email daryll@oss.erin.gov.au). Other enquiries about the position should be directed to Dr Chris Humphrey on (089)799709 (fax (089) 792076, email chrish@oss.erin.gov.au).

The position was advertised in the Weekend Australian on 29 October with a closing date of late November.

## VOLUNTEERS

New ASL Volunteers:

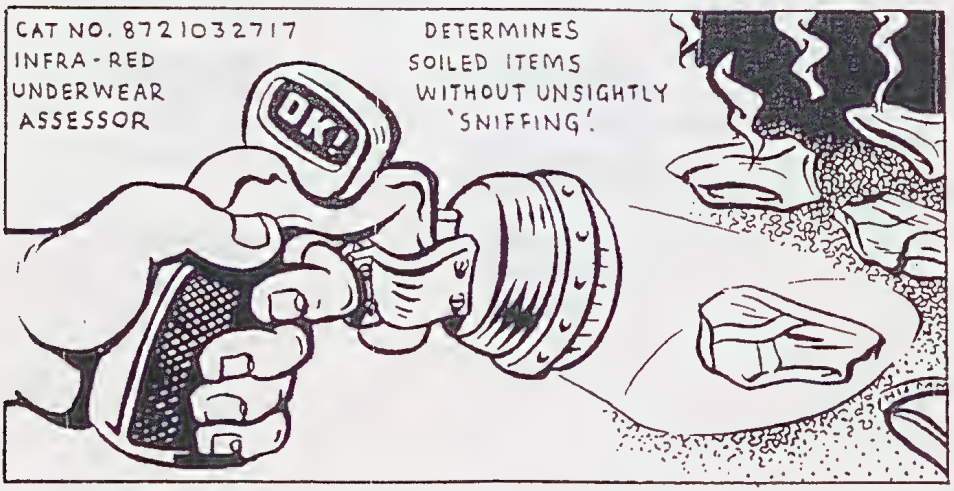
| | |
|---|---|
| Dr S.E.Bunn | ecology of streams, ecology and management of riparian zones, biomonitoring; |
| Dr R.Pearson | tropical freshwater ecology. |

*If you wish to be included on the ASL Volunteers list send your name and area of expertise to ASL Secretary, Dr Richard Marchant.*

## ART WORK

'State of the Art' Underwear Remote Sensing Device by Keith Ferdinands!!.

*This invention has unlimited application for limnologists forced to wear rubber pants in sweltering summer conditions. Yes, we all know what it is like to simulate lentic hyper-saline environments in our underwear over summer - so order now!! (The answer may be to remove the underwear!!)*



# BOOK REVIEWS

Paxton J.R. and Eschmeyer W.N. (eds) (1994) *Encyclopedia of Fishes: a comprehensive guide by international experts*. University of New South Wales Press, Sydney.

My first response to this book was to its visual beauty. With few exceptions, David Kirshner's images are splendid, and aptly celebrate one of the themes of the book - the spectacular diversity of this largest group of vertebrates. The book's title, however, suggests something other than a coffee-table model. My second response, therefore, was incredulity. The international experts are certainly in there, but an encyclopedia on 24,000 species in 240 (mostly pictorial) pages? The book is not, and couldn't be, an encyclopedia or a "comprehensive guide" to fishes. There are conflicting signals here to prospective buyers. Sales hype aside, the book is in fact an informed and exciting introduction to the major taxonomic groupings of fishes and their natural history.

Part one gives a brief introduction and overview of the classification, evolution, habitats and adaptations, behaviour and conservation of fishes. This is the less accessible part of the book, unfortunately, and some readers could well be daunted at this stage. "Introducing Fishes", "Classifying Fishes" and "Fishes through the Ages" are all certainly authoritative, but as introductory pieces they are too formal, and at times even obscure. For example, Karel Liem's description of the lateral line system cries out for simple diagrams, and the reader is left confused about the functional distinction between this system and the inner ear. Stanley Weitzman is no more illuminating in his discussion of phenetic, cladistic and evolutionary approaches to classification. Again opportunities are missed to clarify with diagrams and examples. The same can be said of Lance Grande's "Fish through the Ages", which lacks even a chart of the evolutionary time-scale. Obviously there are severe constraints on an introduction of this length, and apparently these authors were assuming a readership with basic biological literacy - not, I think, a safe assumption.

John Paxton and Patricia Almada-Villela perhaps had an easier task with "Habitats and Adaptations" and "Fish Behaviour", but I think they also had a more accurate sense for the likely readership of "Encyclopedia of Fishes". Julia Parrish certainly displays more of a gift for informality and engaging prose - her analogy for the function of the acoustico-lateralis system is - "somewhat like humans feel the wind against their cheeks".

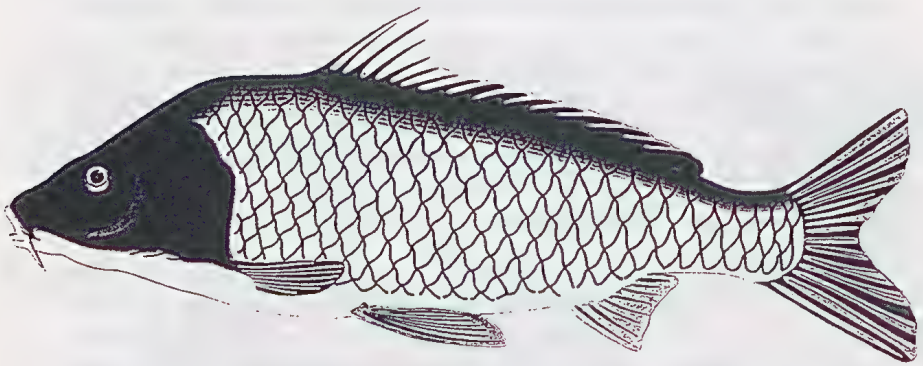
A strength of the book is its emphasis on the conservation of fishes, and Patricia Almada-Villela's chapter on "Endangered Species" is an important one. Obviously the issues are complex, but the chapter leaves more of an impression

of diffuse concern than a clear picture of the major impacting factors and priorities for action.

The strength of the book is in its main section, Part Two. Here major groups (principally orders, sub-orders and large families) are described with respect to their taxonomy, range, conservation status, morphology, habitats, diet, feeding and reproduction. Bizarre and extreme members of each group are singled out for interest. The contributions vary in emphasis and accessibility; "Perches and their allies" has a taxonomic focus, whereas natural history is the focus of "Groupers, seabasses and their allies". The chapters dealing with the less speciose groups, where the authors have the space to discuss unusual adaptations in some detail, are easily the most interesting. However, the expertise and above all the interest of most authors in their fields infects the reader. Few people, once engrossed in Part Two, could fail to be fascinated.

So don't bother looking in the index for *Macquaria ambigua*, "otolith" or "caudal peduncle". But if you want an expert introduction to the broad taxonomic groups of fishes, or a display of the magnificent diversity of these extraordinary animals, this is the book for you.

Jim Puckridge



# BIBLIOGRAPHY

*Please send details (or copies) of reports, chapters, articles, periodicals, monographs, books and videos to Russ Shiel, MDFRC, PO Box 921, Albury, NSW 2640. Despite popular apathy, the Limnology Bibliography will go on.....even ASL members who suddenly get an attack of the guilts and send vast numbers of publications will not be chastised (except W.D. Williams), although on disk would save time (returned, of course).*

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